PCB WINDOW CAULKING REMEDIATION WORK PLAN
WANETA BLAKE LIBRARY
UNIVERSITY OF MAINE AT FORT KENT

Prepared for:

The University of Maine at Fort Kent
23 University Drive
Fort Kent, Maine 04743

Prepared by:

Summit Environmental Consultants, Inc.
8 Harlow Street, Suite 4A
Bangor, Maine 04401

March 27, 2012
Revision 1: August 9, 2012
Project No. 11-3265

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FORT KENT, MAINE

1.0 INTRODUCTION

On behalf of the University of Maine System (UMS) operating through the University of Maine at Fort Kent (UMFK), Summit Environmental Consultants, Inc. (Summit) has prepared this polychlorinated biphenyl (PCB) Window Caulking Remediation Work Plan (Work Plan). This Work Plan addresses the removal of caulking containing PCBs from the windows and door systems associated with Room 1103-Library Procurement Room (Server Room) of the Waneta Blake Library Building (Blake Library) located on the UMFK campus in Fort Kent, Maine. To improve and enhance the physical security and provide a stable environment for the campus computer servers, UMFK is replacing the four existing window units and one door unit located within the Server Room and one exterior entry door unit on the west side of the building adjacent to the Server Room. The four existing aluminum-framed windows, one single door, and one double set of steel entry doors will be removed and custom sized replacement windows and doors reinstalled within the existing openings.

1.1 Outreach Activities

UMFK will conduct outreach activities for occupants of the Blake Library and contractor personnel associated with the renovation project. Outreach will include written notification to building occupants and contractor personnel. This notification will include:

- General information regarding PCBs in window caulk;
- The location of PCB impacted materials;
- The proposed project scope of work and how to identify and avoid the remediation work area;
- Public protection measures including containments, critical barriers, air monitoring and post-removal sampling/analysis;
- Project schedule;
- Contact information for questions and comments.

The notification will be distributed to employees working within the building and posted in conspicuous locations for public viewing.

Formal submittal of the plan for outreach activities will be submitted to US Environmental Protection Agency (USEPA) within 30 days of Work Plan approval.

1.2 Contact and Certification

The person providing this notification and certification who will be responsible for this project is Mr. John D. Murphy, Authorized Signatory for University of Maine System acting through UMFK. Contact information is provided below:

Mr. John D. Murphy
Vice President for Administration
University of Maine at Fort Kent
23 University Drive
Fort Kent, Maine 04743
Office: (207) 834-7516
Fax: (207) 834-7879
jdmurphy@maine.edu

I certify that I am the person in charge of the PCB cleanup, representing the owner/operator of the property where the PCB remediation waste is located. I certify that all sampling plans and collection procedures, laboratory analytical procedures and analytical results used to assess or characterize the PCB contamination at the clean-up site are on file at the location indicated above and are available for USEPA inspection.

_____
Authorized Representative (Signature)

Mr. John D. Murphy
_____
Name of Authorized Representative (printed)

Vice President for Administration
_____
Title

_____
Date

2.0 BACKGROUND

The Blake Library, located on the UMFK campus, is housed in the former UMFK gymnasium building which was constructed in 1929. A new addition was constructed in 1988. The original building is a brick structure with historically ornate exterior granite moldings and trim.

The current planned renovation project impacts the 1929 portion of the building and is limited to the Server Room and the original front entrance door. The remaining portion of the building will not be impacted by planned renovation activities. To improve and enhance the physical security and provide a stable environment (i.e.; temperature and humidity) for the campus computer servers, UMFK is replacing the four original window units and one single door unit associated with the Server Room. In addition, the original front entry door unit on the west side of the building adjacent to the Server Room will be replaced.

UMFK contracted with Summit to perform a limited hazardous materials survey in support of the planned renovation project at the Blake Library. Summit identified PCB containing caulking associated with the four window units and the two door units to be impacted by renovation work at the building. Because of the unique historical and architectural character of the ornate granite trim and brick work associated with these windows and doors, UMFK intends to install custom replacement window and door units within the existing openings to preserve the character of the building. Destructive sampling of the ornate granite trim and masonry brick walls (i.e., the substrate) was not conducted as the sampling would have altered the historical appearance of, and/or significantly damaged, these substrates.

2.1 Window Caulk Sampling

Since Blake Library was constructed prior to 1978, Summit conducted the field screening for PCB on November 3, 2011. During the screening, representative caulking was identified and classified by system or use (e.g.; caulking associated with the junction of window frames and the surrounding substrate; or caulking associated with the wall junctions, etc.). The four windows in the Server Room are all of similar construction type with aluminum frames set in masonry (brick) exterior walls. A gray/white caulk was present around the perimeter of the window system frame at the junction of the metal frame and the associated brick substrate. The caulk was observed to be homogeneous for these windows. Additional caulkings/glazings were not identified on the exterior or interior of these windows. The affected door system (west entrance) consists of a single unit with two metal doors and associated metal frame mounted in ornate granite molding/framing. Caulk associated with the door unit consisted of gray/white caulk present around the perimeter of the frame at the junction of the metal frame and the associated granite substrate. Additional caulkings/glazings were not identified on the exterior or interior of the door unit.

Three caulking samples were collected from the Server Room windows (exterior) and three caulking samples were collected from the west entrance door unit. Caulking sample locations are shown on Figure 1.

The samples were analyzed by Analytics Environmental Laboratory LLC (Analytics) of Portsmouth, New Hampshire using the USEPA Method SW-846-8082 and sample preparation Method SW-846 3540C (Soxhlet). A summary of analytical results is included as Table 1. Photographs of the window/door systems and identified caulking are included in Appendix B. **Laboratory analysis reports are included in Appendix A.**

The following areas were identified as having caulking with greater than (>) 50 ppm PCB content:

1. Gray/white caulk – Junction of metal window/door frames to brick substrate.
2. Gray/white caulk – Junction of metal door frames to granite substrate.

Based upon these results, caulking n the following areas is considered PCB-containing:

1. Junction of metal frames and brick substrate on the four windows and one door to be replaced in the Server Room; and
2. Junction of metal door frame and granite substrate on the door to be replaced.

As stated in Section 2.0, destructive sampling of substrates was not conducted as the sampling would have altered the historic physical appearance of, and/or significantly damaged, these substrates. For the purposes of this project, UMFK assumes that the substrates in contact with PCB-containing caulking are PCB contaminated.

3.0 PCB REMEDIATION OVERVIEW

The primary objective of this PCB remediation project is to remove and properly dispose of the PCB-containing caulking to facilitate installation of custom fit window and door units to improve security and integrity of campus server room. PCB- containing caulk is associated with the junction of metal door and window frames to brick and granite substrates to facilitate installation of custom fit window and door units.

Because of the unique architectural characteristics of the brick and granite borders around these openings, the existing openings must be used, without modification, to maintain the historic architectural character of the building.

3.1 Remediation Goals

The Scope of Work presented in this Work Plan is based on the removal of PCB-containing materials (caulking) with concentrations ≥ 50.0 ppm from the four windows and a door unit at the Blake Library to facilitate replacement. UMFK will perform the work following the "Self-implementing on-site cleanup and disposal of PCB remediation waste" rules under 40 CFR 761.61. Consistent with USEPA guidelines, PCB-containing caulking having a PCB content of ≥ 50.0 ppm is considered a controlled hazardous waste material under TSCA.

Ornate granite trim and brick work associated with the affected windows and door unit have been impacted by PCBs; however because of their unique architectural characteristics, substrate removal is not a feasible option. The remedial option of "containment in-place" (i.e., encapsulation) is proposed.

3.2 PCB Caulking Locations

As presented in Section 2.1 above, gray/white colored caulk at the junction of metal window frames to brick substrate and the gray/white colored caulking at the junction of the metal door frame and granite substrate were identified as having $\geq$ 50.0 ppm PCB content.

Based on the sampling and analysis discussed in Section 2.1; the substrates in contact with PCB-containing caulking are assumed to be PCB contaminated. As such, residual caulk will require removal/cleaning from these surfaces.

Refer to Figures 2 and 3 for depictions of a typical window and the door unit showing caulk locations.

3.3 Contractor Training and Supervision

Work on this project will be performed by a Remediation Contractor experienced in the abatement and handling of hazardous materials and waste. The Remediation Contractor and his (her) personnel shall comply with the following requirements:

A. All personnel performing PCB removal activities must have required training, medical examinations and respirator fit testing, as necessary and as specified by OSHA. Training will include, but may not be limited to, the contents and implementation of this Work Plan and health and safety training relative to the removal, handling and disposal of PCB-containing caulking and associated materials.

B. The Remediation Contractor shall have a qualified project superintendent with appropriate training (as identified above) and knowledge of applicable TSCA regulations on site during all work involving removal/disturbance of PCB caulking and substrate materials.

As part of Owner's Remediation Contractor Request for Proposal (RFP), the Remediation Contractor shall to submit proof of experience and knowledge of applicable TSCA regulations. This proof will be provided in the form of training documentation and summary of experience on similar type projects.

3.4 Recordkeeping and Reporting

A. UMFK shall prepare and maintain all records and documents required by 40 CFR Part 761, including, but not limited to the records required under Subparts J and K.

B. A written record of the decontamination and the analytical sampling shall be established and maintained by UMFK in one centralized location, until such time as USEPA approved in writing a request for alternative disposition of such records.

C. All such records shall be made available for inspection to authorized representatives of USEPA.

D. UMFK shall submit a final report to USEPA within 60 days of completion of remediation activities. This final report shall include, but may not be limited to:

- A short narrative of project activities;
- Characterization and confirmation sampling analytical results;
- Copies of the accompanying analytical chains of custody;
- Field and laboratory quality control/quality assurance checks;
- An estimate of the quantity of PCB waste disposed of and the size of the decontaminated area(s);

- Copies of manifests; and,
- Copies of certificates of disposal or similar certifications issued by the disposer.

E. Required submittals shall be mailed to:

USEPA Region 1 PCB Coordinator
United States Environmental Protection Agency
5 Post Office Square, Suite 100
Boston, Massachusetts 02109-3912

4.0 PCB REMEDIATION WORK PLAN

The intent of this Work Plan is to provide guidance to the Remediation Contractor to:

- Remove/clean caulking and residual materials from the window frames and substrate surfaces of four windows and one door unit;
- Remove and dispose of affected metal window stops and frames (four windows total);
- Protect the ground surface and adjacent interior and exterior building areas; and,
- Properly containerize caulking and residue for waste disposal by others.

Work shall be performed in accordance with applicable Maine Department of Environmental Protection (MEDEP), USEPA, U.S. Department of Transportation (DOT) and the Occupational Safety and Health Administration (OSHA) regulations.

4.1 General

A. The Remediation Contractor shall furnish all labor, materials, and equipment required to safely remove and handle PCB-containing caulking from the non-porous (aluminum window frames) surfaces and from the surface of the substrate (granite/brick). Materials shall include, but not be limited to, appropriate Personal Protective Equipment (PPE), cleaning agents and polyethylene sheeting for barriers and ground cover. Equipment shall include, but not limited to, appropriate hand tools, High Efficiency Particulate Air (HEPA) vacuums for clean-up of residual dust and debris, negative air machines (NAMs), as well as sufficient and appropriate waste containers for wastes generated as part of this project.

B. The Remediation Contractor shall provide for interior and exterior dust control during caulking removal and cleaning activities. PCB-containing dust must not be released into interior building locations or to the exterior of the work area. Engineering controls and work practices, including the construction of critical barriers encompassing the work area(s) on the interior and exterior of the building, will be employed to minimize dust migration beyond the work area.

C. The amount/area of caulking removal shall be each work day will be limited to what can be removed and cleaned up within that single work day.

D. A pre-construction meeting will be conducted prior to commencement of work impacting PCB-containing caulking. Attendees will include (at a minimum) representatives of UMFK, the Remediation Contractor's Supervisor and the environmental consultant. Details and logistics of the remediation project will be discussed at this meeting

E. For this project, PCB Bulk Product Waste includes, but may not be limited to:

- PCB-containing caulking.

F. PCB Remediation Waste includes, but may not be limited to:

- Materials in contact with specified PCBs (e.g., window stops and frames);
- Used PPE and used poly sheeting in contact with specified PCBs;
- Contaminated debris in contact with specified PCBs; and,
- Rags and wipes used to clean surfaces in contact with specified PCBs.

4.2 Sequence of Work

To remove PCB containing caulking and facilitate the removal and replacement of window systems, the following sequence of work and associated work practices will be employed by the Remediation Contractor:

A. Remove materials and furniture from behind the window(s) scheduled to be replaced.

B. Secure one layer of 6-mil polyethylene (poly), covered by a 3/8-inch thick (minimum) plywood sheet as a critical barrier, to the inside of each window, from the top of the frame to the bottom.

C. Establish the work area zone using barrier (danger) tape.

D. Stage DOT shippable waste containers adjacent to the work area. The interior of each container will be double lined containers with 6-mil poly bags. Waste containers shall be marked as either "PCB Bulk Product Waste" or "PCB Remediation Waste" in accordance with 40 CFR §761.40 and §761.45.

E. Install/place a ground cover below the work area using two layers of 6-mil poly sheeting placed over a canvas tarp (or similar). The poly sheeting and tarp shall be secured to prevent blowing from wind and reinforced against damage by ladders or staging. The poly sheeting and tarp shall abut the building, and extend a minimum of eight (8) feet out from the building, to capture caulking that may fall to the ground during removal.

F. Utilizing a wood frame, secure two layers of 6-mil poly to contain the work area. The poly will be reinforced to prevent dislodgement by wind. The containment shall be constructed to prevent the release of fugitive dust resulting from the remediation process.

G. Equip the containment with a Negative Air Machine (NAM) equipped with a pre-filter and HEPA filter to achieve negative air flow within the containment. Negative air flow will be maintained until clearance has been achieved within the contained area.

H. Don appropriate PPE including coveralls with hood (recommend Tyvek), gloves and, at a minimum, ½-faced negative pressure respirators equipped with High Efficiency Particulate Air (HEPA) cartridges. The respirators shall not be removed while the employees are within the work area. Eating, drinking and smoking are not permitted within the work area.

I. Identify a wash station within the vicinity of the work area that is accessible to the Remediation Contractor's employees.

J. Remove perimeter caulking from between and on the window and door frames and adjacent brick/granite substrate using non-powered hand tools (e.g.; utility knives, hand scrapers/putty knives and hammer and chisel) and a HEPA vacuum. Remove the bulk of the caulk to the extent feasible (i.e.; gross removal of caulk present on the window frame and adjacent brick/granite substrate).

K. Remove and dispose of metal perimeter window frame stops and metal window frames using non-powered hand tools.

L. Clean surface of remaining substrates of residual caulk using an approved Performance-Based Organic Decontamination Fluid (PODF) (40 CFR 761.79) (e.g., kerosene). Surfaces will be cleaned with the approved PODF a minimum of two separate times. Final surface cleaning shall include the use of hot water and detergent (or other surfactant) followed by clean water rinse, to remove residual PODFs. Care will be taken not to damage the substrate.

M. Following residual caulk removal, containment poly and critical barriers shall be HEPA vacuumed and then wiped with a solvent such as "CAPSUR" or an approved PODF (e.g., kerosene) to remove any visible or non-visible caulking/residue HEPA vacuum residual caulking from poly ground cover. The inner layer of the poly ground cover will be carefully folded as not to disperse residual caulking or dust. The work area will be evaluated for the presence of any residual caulking requiring removal.

N. UMFK's environmental consultant will conduct post-removal visual inspections of work area(s) and interior surfaces for dust, debris or residual caulking (Refer to Section 4.4)

O. Failure to meet the acceptance criteria will result in the Remediation Contractor conducting additional caulking removal and/or re-cleaning of the work area.

P. Upon completion of a successful visual assessment of the remaining affected substrates, two coats of an acrylic coating such as *Sikagard 550W* or *Sikagard 671W* (or equivalent) will be applied directly to the affected brick/granite surfaces to create a containment barrier encapsulating residual PCBs. Refer to Appendix C for product information

Q. Remove and dispose of PPE in appropriate disposal container. Wash hands and face following remove of PPE.

R. Seal disposal containers and relocate to a secure area while awaiting transport for disposal.

S. Provide access to the work area to the environmental consultant to conduct Post-Removal Clearance inspection and sampling (Refer to Section 4.4).

T. Upon receipt of analytical results meeting the clearance criteria, remove poly containment, disposable items, equipment and critical barriers.

4.3 Ambient Air Monitoring

A. Exterior ambient air monitoring for dust will not be performed during remediation work because the brick/granite substrates will not be cut, ground or otherwise impacted by the proposed remediation activities.

B. Air sampling will be performed inside the building workspace and outdoors in the vicinity of the work area to document PCB levels before any caulk is disturbed (background levels). Sampling will be conducted in accordance with a site-specific air sampling plan.

C. Sampling for airborne PCBs will be conducted when PCB remediation work is completed. The sampling will be performed *near an occupied space* (an "occupied space" is defined as being within 50 feet of the interior critical barrier(s) of a windows/door being remediated). Air samples will be collected from the interior of the building in areas adjacent to the work area(s), in accordance with a site-specific air sampling plan. The acceptance criteria for air

samples shall be for PCB concentrations to be less than or equal to ($\leq$) the established project background levels (Section 4.3 (B)).

4.4 Post-Removal Clearance/Acceptance Criteria

A. UMFK's environmental consultant will conduct post-removal visual inspections of work areas and interior surfaces for dust, debris or residual caulking. The acceptance criteria is:

- No visible PCB containing material identified for removal shall be present;
- All surfaces within the work area shall be free of dust and debris. This includes work areas, work surfaces, and all critical barriers and drop cloths.

B. Failure to meet the acceptance criteria will result in the Remediation Contractor conducting additional and/or re-cleaning of the work area. Additional cleaning, if required, will be performed by the Remediation Contractor at no additional cost to UMFK.

C. Upon completion of a successful visual assessment of the remaining affected substrates, two coats of an acrylic coating such as *Sikagard 550W* or *Sikagard 671W* (or equivalent) will be applied directly to the affected brick/granite surfaces to create a containment barrier encapsulating residual PCBs (if present). Refer to Appendix C for product information.

D. After the liquid acrylic coating application, baseline surface wipe samples will be collected to evaluate the effectiveness of the encapsulation and establish a baseline for future monitoring. Verification sampling will consist of wipe samples using TSCA required protocols and sampling of a 100 cm^2 area per sample. Sampling frequency (as a non-porous material) will be conducted at the frequency of one sample per 10 linear feet of impacted substrate, or a minimum of one sample per affected window/door unit.

E. Analytical results of the wipe samples from the acrylic coating will be evaluated to determine whether this task is completed:

- Wipe sample results of less than or equal to ($\leq$) 1.0 µg/100 cm^2 total PCBs will indicate the task is complete. (Note: Sample analysis will be performed using the USEPA Method SW-846-8082 and sample preparation Method SW-846 3540C (Soxhlet)).
- Wipe sample results of greater then (>)1.0 µg/100 cm^2 total PCBs will indicate additional application of the acrylic coating on the surface(s) and additional verification sampling to be performed after the additional liquid coating application. Samples will be collected from a different location on the affected surface.

G. UMFK will be required to establish a deed restriction applying to the encapsulated areas. The deed restriction will prohibit disturbance of the encapsulated substrate(s) unless performed under a new work plan approved by USEPA. In addition, UMFK will develop a detailed long-term Monitoring and Maintenance Implementation Plan (MMIP) for the encapsulated surfaces, which will be submitted to the USEPA for review and approval. A copy of the USEPA-approved MMIP will be attached to the deed restriction.

4.5 Site Restoration

A. During the course of the work, the Remediation Contractor shall keep the site of operations in a clean and orderly condition.

B. The Remediation Contractor shall dispose of all residues resulting from the construction work. At the completion of the work, the Remediation Contractor shall:

- Remove waste materials, rubbish, tools, equipment, machinery, and surplus materials.
- Remove residual tape/adhesive from inside surfaces and restore as necessary.
- Conduct an inspection of all surfaces and work areas to verify that the site is in an orderly condition following completion of the work.

4.6 Security and Work Area Access

A. The Remediation Contractor shall be responsible for work area security. Untrained workers and passersby shall not be permitted within the work area as established by barrier tape (or other means approved by UMFK).

4.7 Project Documentation

A. The Remediation Contractor shall maintain, as a minimum, the following:

- Daily field reports documenting completed work, disposal container status, and the names of workers in contact with PCB-containing caulking.
- As-built drawing of windows completed.
- Training records of employees in contact with PCB containing caulking.
- Disposal records as specified in Section 4.8.

4.8 Disposal

A. The Remediation Contractor will be responsible for contracting with a hazardous waste handling company for transport and disposal of the containers. Costs associated with waste transportation and disposal will be the responsibility of Remediation Contractor.

B. Prior to transport, PCB Bulk Product Waste and PCB Remediation Waste will be marked in accordance with 40 CFR §761.40 and temporarily stored in accordance with §761.65.

C. Containers will be properly labeled, transported and disposed as PCB Bulk Product Waste or PCB Remediation Waste, in accordance with §761.62 or 40 CFR §761.61(a)5, unless otherwise specified below. (Note: There are no hazardous waste landfills in Maine that are permitted to accept the following wastes).

- PCB Bulk Product Wastes (including removed caulking and associated debris) and PCB Remediation Wastes (including cleaning rags/wipes, air filters) shall be assumed to contain PCBs at concentrations at or above 50.0 ppm and will be disposed of at a TSCA landfill or hazardous waste landfill permitted by USEPA to accept such waste. Liquid solvent wastes generated as part of the decontamination process shall be assumed to contain PCBs at concentrations at or above 50.0 ppm and will be disposed of in accordance with 40 CFR 761.60(a).

- PCB Remediation Waste (including metal window and door frames) will be disposed of at TSCA landfill or a hazardous waste landfill permitted by the USEPA to accept such waste.

D. Decontamination wastes and residues (including but not limited to: used PPE, tools, poly sheeting and other materials used for the construction of work area enclosures) with PCB concentrations of < 50.0 ppm may be segregated from those PCB Bulk Product Wastes and PCB Remediation Wastes with known PCB concentrations of $\geq$ 50.0 ppm and disposed in accordance with 40 CFR §761.79(g). These wastes may be disposed of in a licensed landfill in the State of Maine that accepts such waste (e.g.; Juniper Ridge Landfill in Old Town, Maine. Note: Juniper Ridge does not require characterization testing of these wastes prior to disposition).

E. Moveable equipment, tools and sampling equipment shall be decontaminated in accordance with either 40 CFR §761.79(b)(3)(i)(A), §761.79(b)(3)(ii)(A), or §761.79(c)(2).

F. Wash water collected from the personnel hygiene facility/wash station shall be collected and may be disposed of directly to the local (Town of Fort Kent) municipal sanitary sewer. Sampling and characterization of the collected water, prior to disposal, is not required by the Town of Fort Kent Wastewater Treatment Plant.

G. PCB contaminated water generated during surface decontamination shall be disposed under §761.60.

H. A designated UMFK representative will be responsible for reviewing and signing shipping papers that designate the UMFK as the waste generator.

I. Copies of associated bills of lading, waste shipment records, certificates of disposal will be provided to the UMFK by the hazardous waste handling company.

4.9 Project Schedule

Work described within this notification will commence at a date to be determined by UMFK.

Tables

TABLE 1

SUMMARY OF LABORATORY ANALYTICAL RESULTS
FOR PCB WINDOW CAULK
WANETA BLAKE LIBRARY
UNIVERSITY OF MAINE AT FORT KENT

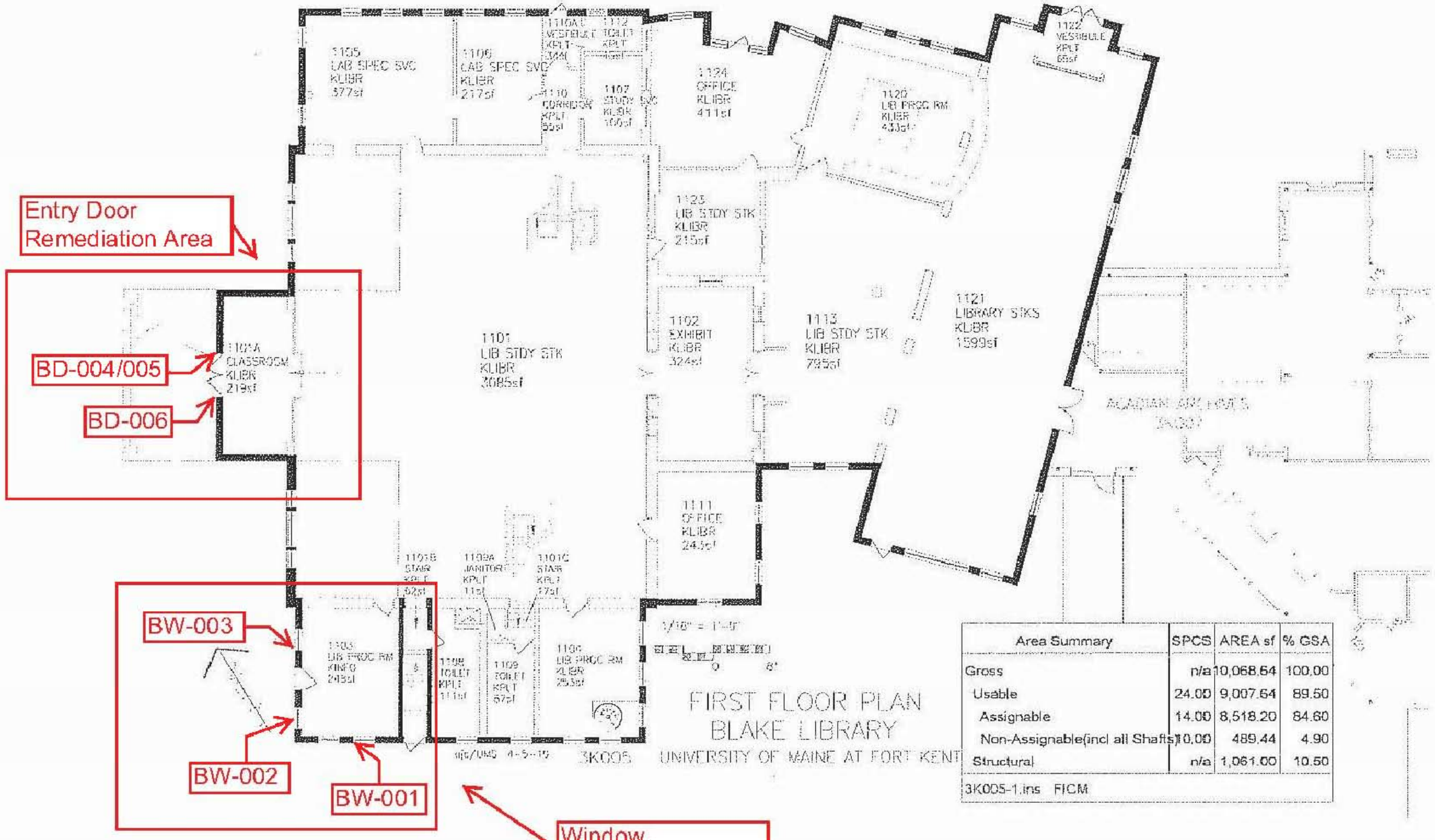
SAMPLE #	LOCATION	SAMPLE DATE	RESULT (PPM)[1,2]	COMMENTS
BW-001	Window Library Server Room-Exterior	11/03/11	**92,200**	Collected from the left side of the east window on the south elevation
BW-002	Window Library Server Room-Exterior	11/03/11	**89,500**	Collected from the bottom of the south window on the west elevation
BW-003	Window Library Server Room-Exterior	11/03/11	**125,000**	Collected from the right side of the north window on the west elevation
BD-004	Door West Entrance - Exterior	11/03/11	**28,600**	Collected from the north side of the door frame
BD-005	Door West Entrance - Exterior	11/03/11	**87,300**	Collected from the north side of the door frame
BD-006	Door West Entrance - Exterior	11/03/11	**128,000**	Collected from the south side of the door frame.

[1] PPM = Parts Per Million
[2] Bolded values exceed the USEPA guideline of 50.0 PPM.

Figures

Figure 1

BUILDING PLAN
AND
SAMPLE LOCATIONS



Area Summary	SPCS	AREA sf	% GSA
Gross	n/a	10,068.64	100.00
Usable	24.00	9,007.64	89.50
Assignable	14.00	8,518.20	84.60
Non-Assignable(incl all Shafts)	10.00	489.44	4.90
Structural	n/a	1,061.00	10.50

3K005-1.ins FICM

LEGEND:

BW-001: Caulk Sample Location

NOTE: All PCB samples exceed the USEPA guideline concentration of 50 mg/kg.

Summit
Environmental Consultants, Inc
8 HARLOW STREET
BANGOR, MAINE 04401
Tel.: (207) 262-9040
Fax: (207) 262-9080
www.summitenv.com

DRAWN BY: BMD
CHECKED BY: DBK
SCALE: NTS
CADD: FIGURE5.DWG
DATE: MARCH 2012
JOB NUMBER: 11-3265

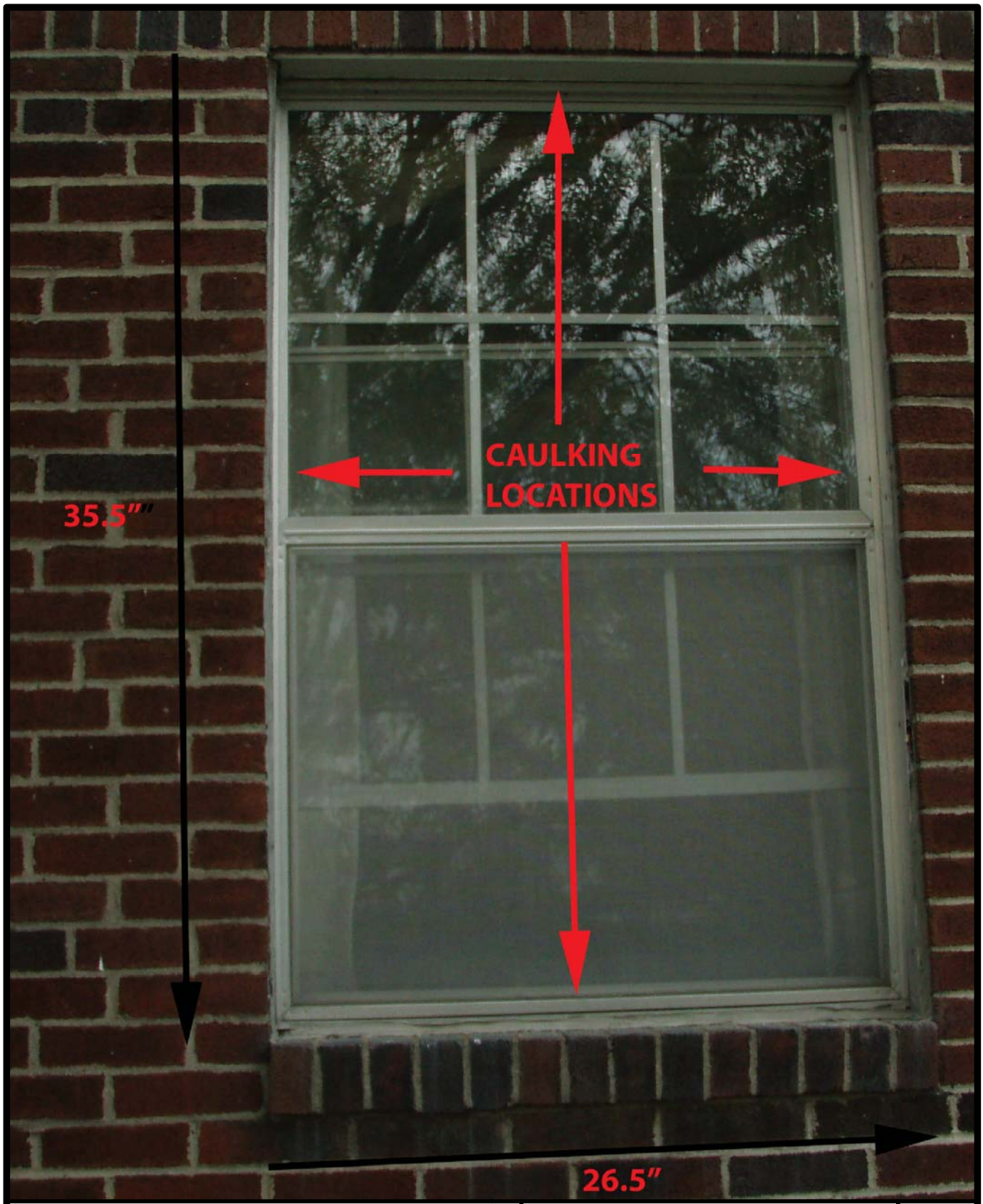
AFFECTED AREAS AND SAMPLE LOCATIONS

BLAKE LIBRARY PCB REMEDIATION
PREPARED FOR
UNIVESITY OF MAINE AT FORT KENT

FIGURE 1

Figure 2

TYPICAL WINDOW DIAGRAM



TYPICAL WINDOW

UNIVERSITY OF MAINE AT FORT KENT

BLAKE LIBRARY PCB REMEDIATION

DATE: MARCH 2012	DRAWN BY: BMD	CHECKED BY: DBK
JOB: 11-3265	NOT TO SCALE	FILE: FIGURES.DWG

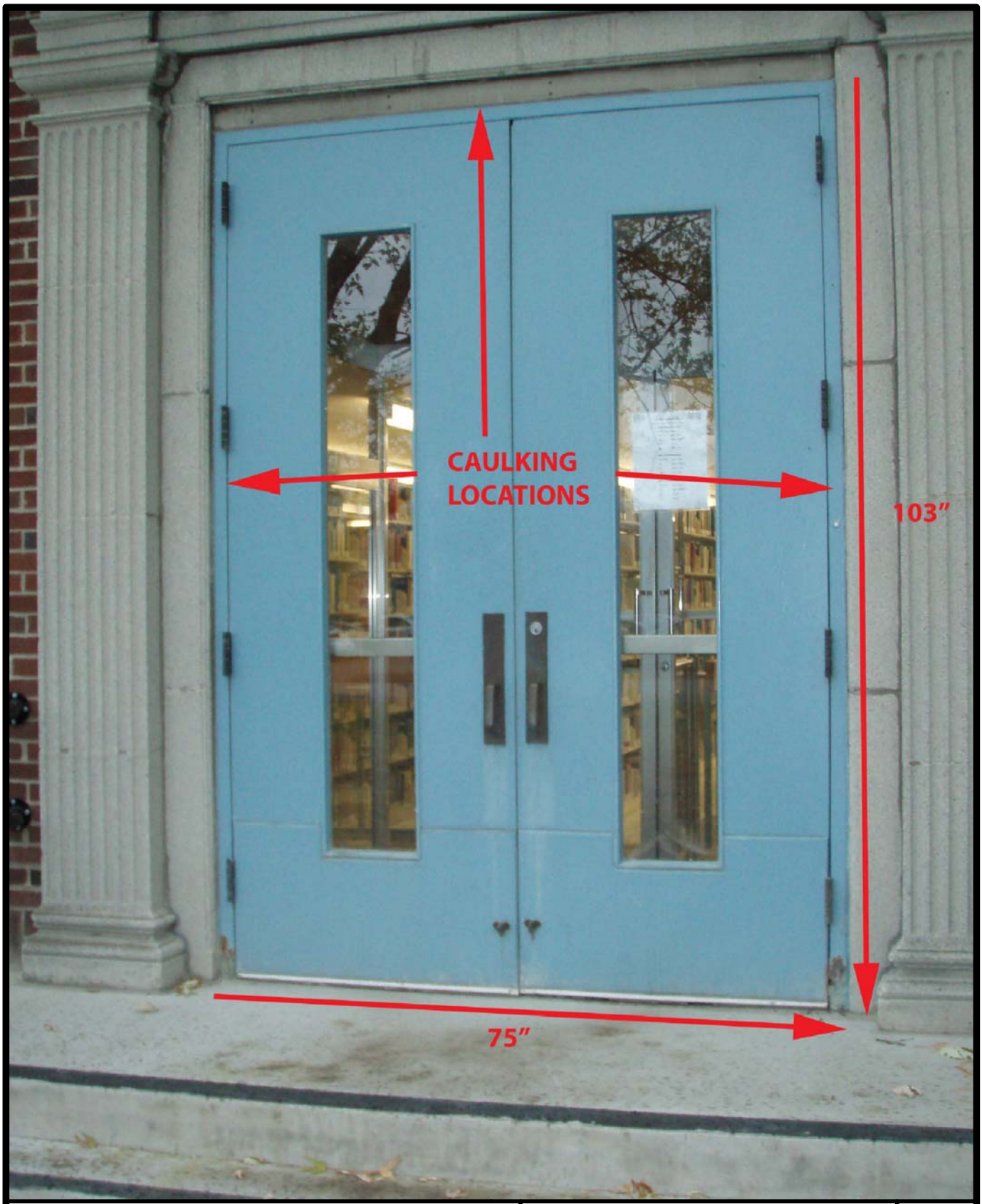
Summit Environmental Consultants, Inc
8 HARLOW STREET
BANGOR, MAINE 04401
Tel.: (207) 262-9040
Fax: (207) 262-9080

FIGURE

2

Figure 3

ENTRY DOOR



ENTRY DOOR

UNIVERSITY OF MAINE AT FORT KENT

BLAKE LIBRARY PCB REMEDIATION

DATE: MARCH 2012	DRAWN BY: BMD	CHECKED BY: DBK
JOB: 11-3265	NOT TO SCALE	FILE: FIGURES.DWG

Summit Environmental Consultants, Inc
8 HARLOW STREET
BANGOR, MAINE 04401
Tel.: (207) 262-9040
Fax: (207) 262-9080

FIGURE

3

Appendices

Appendix A

LABORATORY ANALYTICAL RESULTS

CAULKING

analytics environmental laboratory LLC

195 Commerce Way Suite E
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906
www.analyticslab.com

November 15, 2011

Mr. Dennis Kingman
Summitt Environmental
8 Harlow St. Suite 4A
Bangor, ME 04401

RE: Analytical Results Case Narrative
Analytics # 71462
Blake Library

Dear Mr. Kingman;

Enclosed please find the analytical results for samples submitted for the above-mentioned project. The attached Cover Page lists the sample IDs, Lab tracking numbers and collection dates for the samples included in this deliverable.

Samples were analyzed for Polychlorinated Biphenyls (PCBs) by EPA Method 8082.

Unless otherwise noted in the Non-conformance Summary listed below, all of the quality control (QC) criteria including initial calibration, calibration verification, surrogate recovery, holding time and method accuracy/precision for these analyses were within acceptable limits.

This Level II data package has been assembled in the following order:

Case Narrative/Non-Conformance Summary
Sample Log Sheet - Cover Page
PCB Form 1 Data Sheet for Samples and Blanks
Chromatograms
PCB Form 10 Confirmation Results
PCB Form 3 MS/MSD (LCS) Recoveries
Chain of Custody (COC) Forms

QC NON CONFORMANCE SUMMARY

Sample Receipt:
No exceptions.

PCBs by EPA Method 8082:
No results were reported below the quantitation limit.

All samples were analyzed at dilutions due to concentrations of PCBs that exceeded the calibration range of the instrument.

If you have any questions on this data submittal, please do not hesitate to contact me.

Sincerely,
ANALYTICS Environmental Laboratory, LLC

Stephen Knollmeyer
Laboratory Director

analytics environmental laboratory LLC

195 Commerce Way Suite E
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906
www.analyticslab.com

Mr. Dennis Kingman
Summit Environmental
8 Harlow St. Suite 4A
Bangor ME 04401

Report Number: 71462

Revision: Rev. 0

Re: Blake Library (Project No: 11-3265)

Enclosed are the results of the analyses on your sample(s). Samples were received on 08 November 2011 and analyzed for the tests listed. Samples were received in acceptable condition, with the exceptions noted below or on the chain of custody. These results pertain to samples as received by the laboratory and for the analytical tests requested on the chain of custody. The results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report. Please see individual reports for specific methodologies and references.

Lab Number	Sample Date	Station Location	Analysis	Comments
71462-1	11/03/11	BW-001	EPA 8082 (PCBs only)	
71462-2	11/03/11	BW-002	EPA 8082 (PCBs only)	
71462-3	11/03/11	BW-003	EPA 8082 (PCBs only)	
71462-4	11/03/11	BD-004	EPA 8082 (PCBs only)	
71462-5	11/03/11	BD-005	EPA 8082 (PCBs only)	
71462-6	11/03/11	BD-006	EPA 8082 (PCBs only)	

Sample Receipt Exceptions: None

Analytics Environmental Laboratory is certified by the states of New Hampshire, Maine, Massachusetts, Connecticut, Rhode Island, Virginia, Maryland, and North Carolina, and is accredited by the Deparment of Defense (DOD) ELAP program. A list of actual certified parameters is available upon request.

If you have any questions on these results, please do not hesitate to contact us.

Authorized signature _____
Stephen L. Knollmeyer Lab. Director

Date 11/14/2011

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Surrogate Compound Limits

Matrix: / Units:	Aqueous % Recovery	Solid % Recovery	Method
Volatile Organic Compounds - Drinking Water			
1,4-Difluorobenzene	70-130		EPA 524.2
Bromofluorobenzene	70-130		
1,2-Dichlorobenzene-d4	70-130		
Volatile Organic Compounds			
1,2-Dichloroethane-d4	70-120	70-120	EPA 624/8260B
Toluene-d8	85-120	85-120	
Bromofluorobenzene	75-120	75-120	
Semi-Volatile Organic Compounds			
2-Fluorophenol	20-110	35-105	EPA 625/8270C
d5-Phenol	15-110	40-100	
d5-nitrobenzene	40-110	35-100	
2-Fluorobiphenyl	50-110	45-105	
2,4,6-Tribromophenol	40-110	40-125	
d14-p-terphenyl	50-130	30-125	
PAH's by SIM			
d5-nitrobenzene	21-110	35-110	EPA 8270C
2-Fluorobiphenyl	36-121	45-105	
d14-p-terphenyl	33-141	30-125	
Pesticides and PCBs			
2,4,5,6-Tetrachloro-m-xylene (TCX)	46-122	40-130	EPA 608/8082
Decachlorobiphenyl (DCB)	40-135	40-130	
Herbicides			
Dichloroacetic acid (DCAA)	30-150	30-150	
Gasoline Range Organics/TPH Gasoline			
Trifluorotoluene TFT (FID)	60-140	60-140	MEDEP 4217/EPA 8015
Bromofluorobenzene (BFB) (FID)	60-140	60-140	
Trifluorotoluene TFT (PID)	60-140	60-140	
Bromofluorobenzene (BFB) (PID)	60-140	60-140	
Diesel Range Organics/TPH Diesel			
m-terphenyl	60-140	60-140	MEDEP 4125/EPA 8015/CT ETPH
Volatile Petroleum Hydrocarbons			
2,5-Dibromotoluene (PID)	70-130	70-130	MADEP VPH May 2004 Rev1.1
2,5-Dibromotoluene (FID)	70-130	70-130	
Extracatable Petroleum Hydrocarbons			
1-chloro-octadecane (aliphatic)	40-140	40-140	MADEP EPH May 2004 Rev1.1
o-Terphenyl (aromatic)	40-140	40-140	
2-Fluorobiphenyl (Fractionation)	40-140	40-140	
2-Bromonaphthalene (fractionation)	40-140	40-140	

PCB
DATA SUMMARIES

analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Dennis Kingman
Summit Environmental
8 Harlow St. Suite 4A
Bangor ME 04401

November 14, 2011

CLIENT SAMPLE ID

Project Name: Blake Library

Project Number: 11-3265

Field Sample ID: Lab QC

SAMPLE DATA

Lab Sample ID: B110911PSOX RR
Matrix: Soil
Percent Solid: 100
Dilution Factor: 1.0
Collection Date:
Lab Receipt Date:
Extraction Date: 11/09/11
Analysis Date: 11/11/11

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U

Surrogate Standard Recovery

2,4,5,6-Tetrachloro-m-xylene	89	%
Decachlorobiphenyl	96	%

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

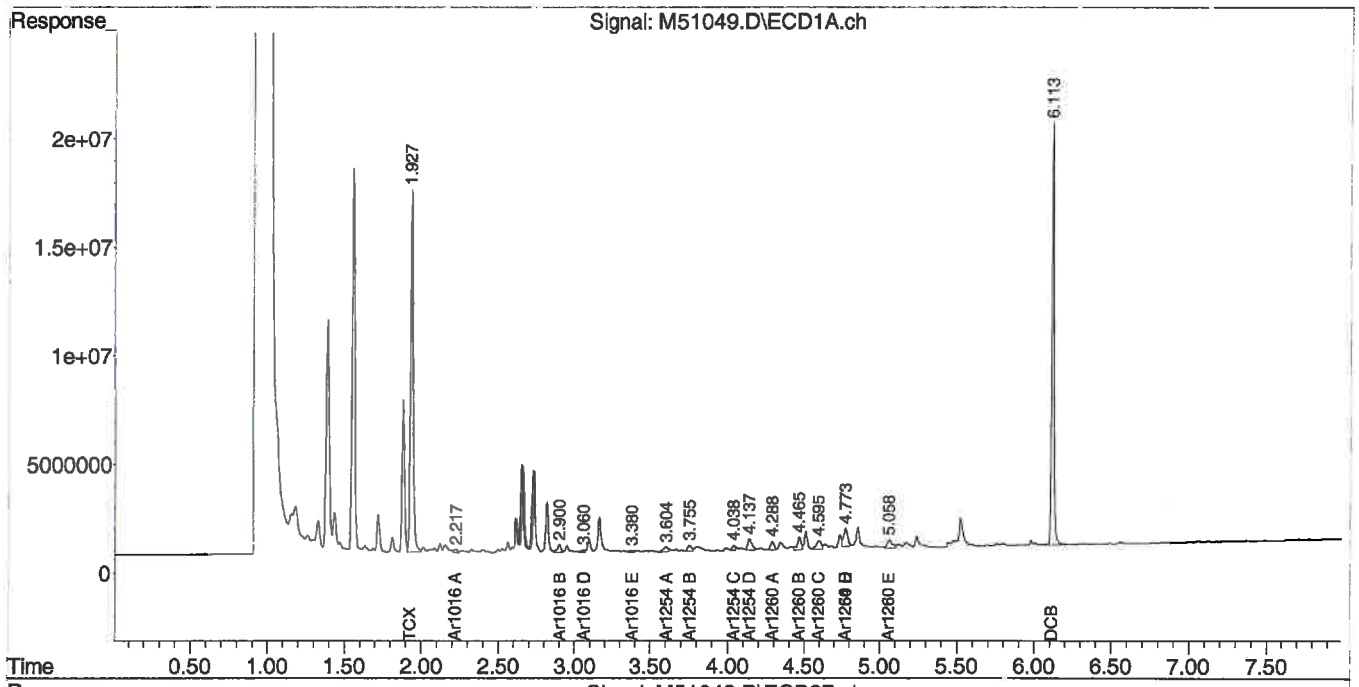
PCB Report

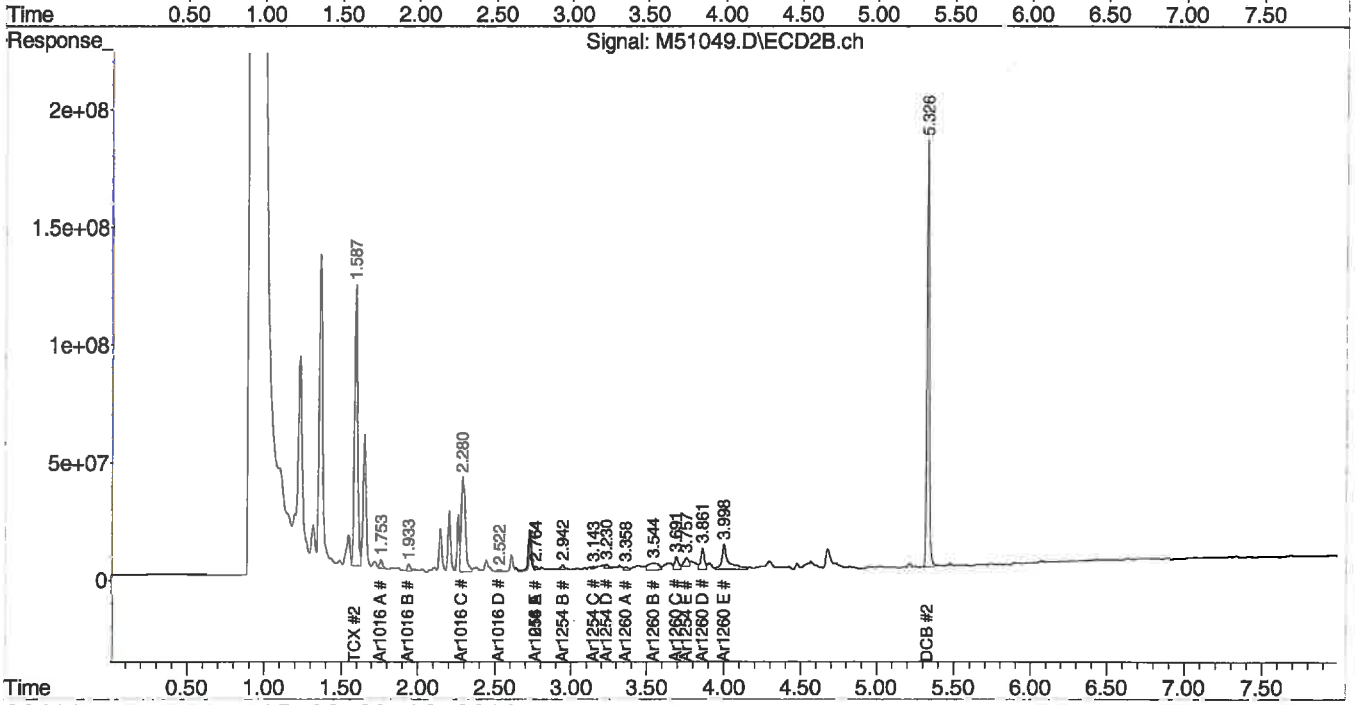
Authorized signature

Data Path : C:\msdchem\1\DATA\111111-M\
Data File : M51049.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 11 Nov 2011 2:29 pm
Operator : JK
Sample : B110911PSOX,RR2,,A/C
Misc : SOIL
ALS Vial : 6 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Nov 15 08:23:03 2011
Quant Method : C:\msdchem\1\METHODS\PCB100411.M
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254
QLast Update : Fri Nov 11 14:27:11 2011
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 2 uL
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um





analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Dennis Kingman
Summit Environmental
8 Harlow St. Suite 4A
Bangor ME 04401

November 15, 2011

CLIENT SAMPLE ID

Project Name: Blake Library

Project Number: 11-3265

Field Sample ID: Lab QC

SAMPLE DATA

Lab Sample ID: B110911PSOX RR
Matrix: Soil
Percent Solid: 100
Dilution Factor: 1.0
Collection Date:
Lab Receipt Date:
Extraction Date: 11/09/11
Analysis Date: 11/15/11

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U

Surrogate Standard Recovery

2,4,5,6-Tetrachloro-m-xylene	94	%
Decachlorobiphenyl	101	%

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

COMMENTS: Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C. Results are expressed on a dry weight basis.

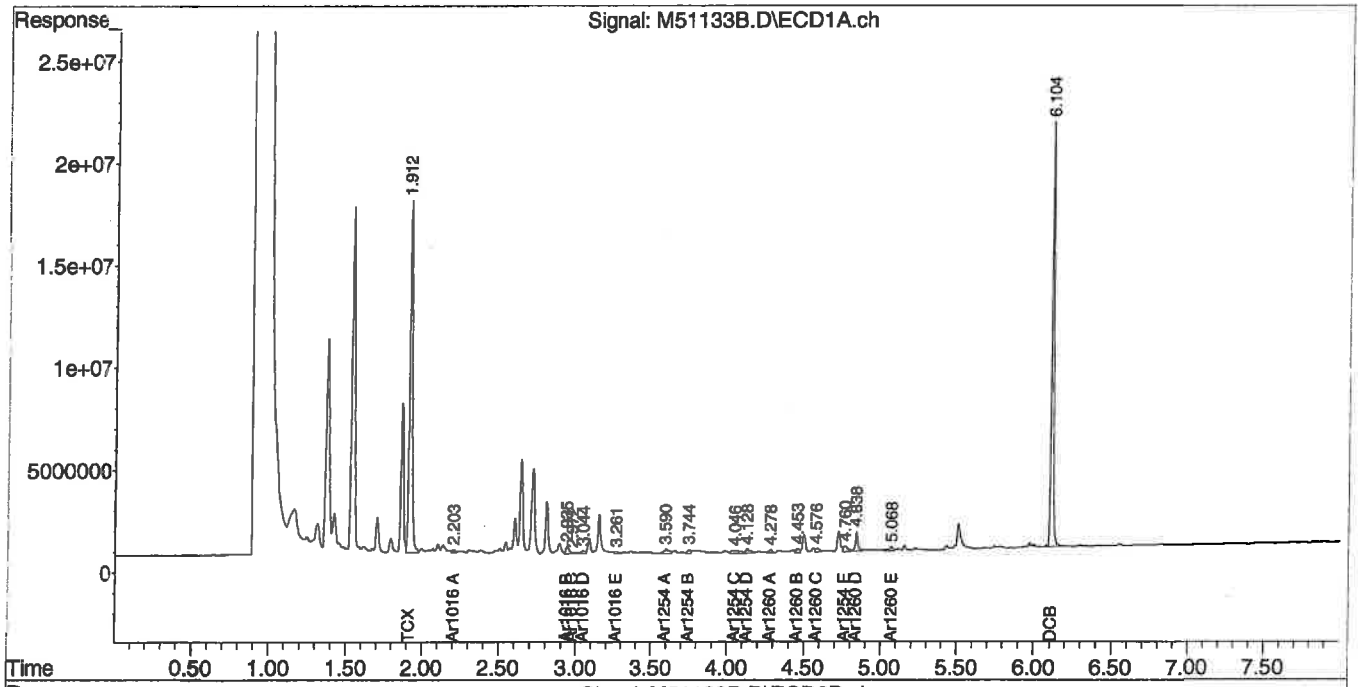
PCB Report

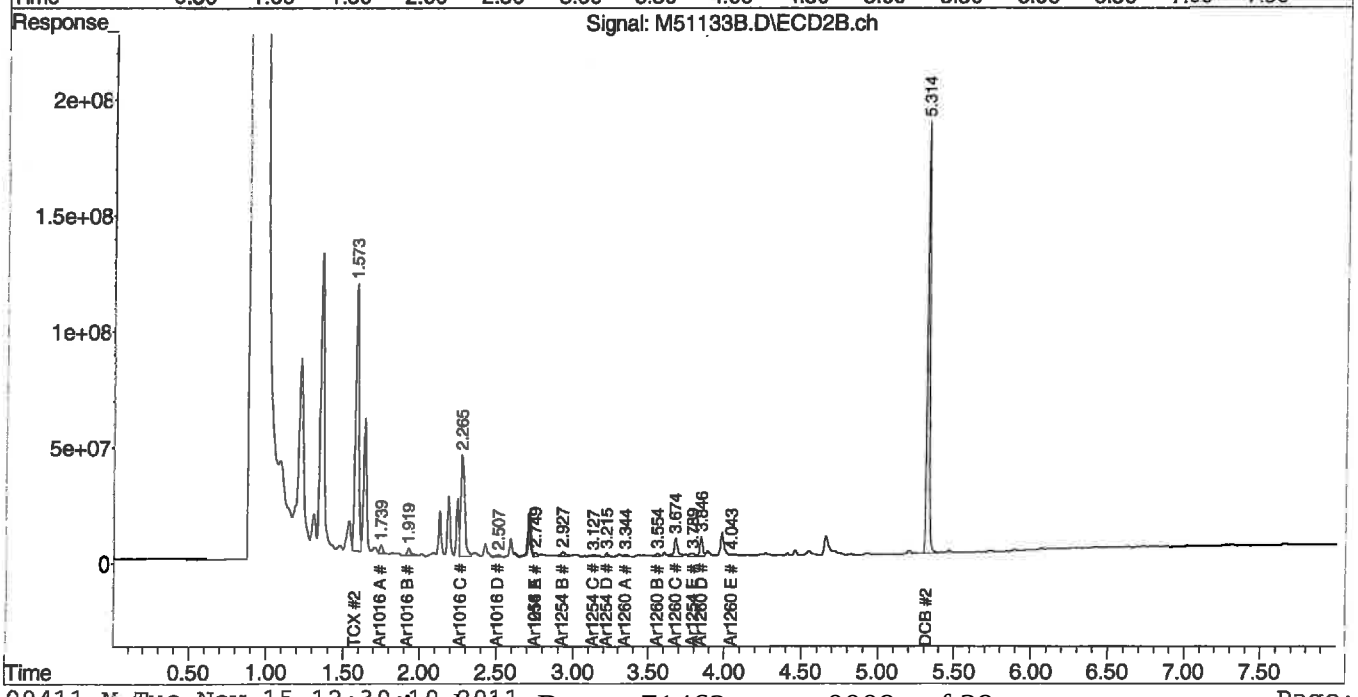
Authorized signature

Data Path : C:\msdchem\1\DATA\111511-M\
Data File : M51133B.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 15 Nov 2011 11:43 am
Operator : JK
Sample : B110911PSOX,RR,,A/C
Misc : SOIL
ALS Vial : 6 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Nov 15 12:30:01 2011
Quant Method : C:\msdchem\1\METHODS\PCB100411.M
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254
QLast Update : Tue Nov 15 09:28:10 2011
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 2 uL
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um





analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Dennis Kingman
Summit Environmental
8 Harlow St. Suite 4A
Bangor ME 04401

November 14, 2011

CLIENT SAMPLE ID

Project Name: Blake Library

Project Number: 11-3265

Field Sample ID: BW-001

SAMPLE DATA

Lab Sample ID: 71462-1
Matrix: Solid
Percent Solid: 97
Dilution Factor: 273000
Collection Date: 11/03/11
Lab Receipt Date: 11/08/11
Extraction Date: 11/09/11
Analysis Date: 11/11/11

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	9009000	U
PCB-1221	9009000	U
PCB-1232	9009000	U
PCB-1242	9009000	U
PCB-1248	9009000	U
PCB-1254	9009000	**92200000**
PCB-1260	9009000	U

Surrogate Standard Recovery

2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.
* The surrogates were diluted out.

PCB Report

Authorized signature

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M
GC Column #1: STX-CLPesticides I
Column ID: 0.25 mm
GC Column #2: STX-CLPesticides II
Column ID: 0.25 mm

SDG:
Sample: 71462-1,1:50000,,A/C
Data File: M51050.D
Dilution Factor: 273141.1

	Column #1	Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	92176721	82533503	11.0	

Column to be used to flag RPD values greater than QC limit of 40%

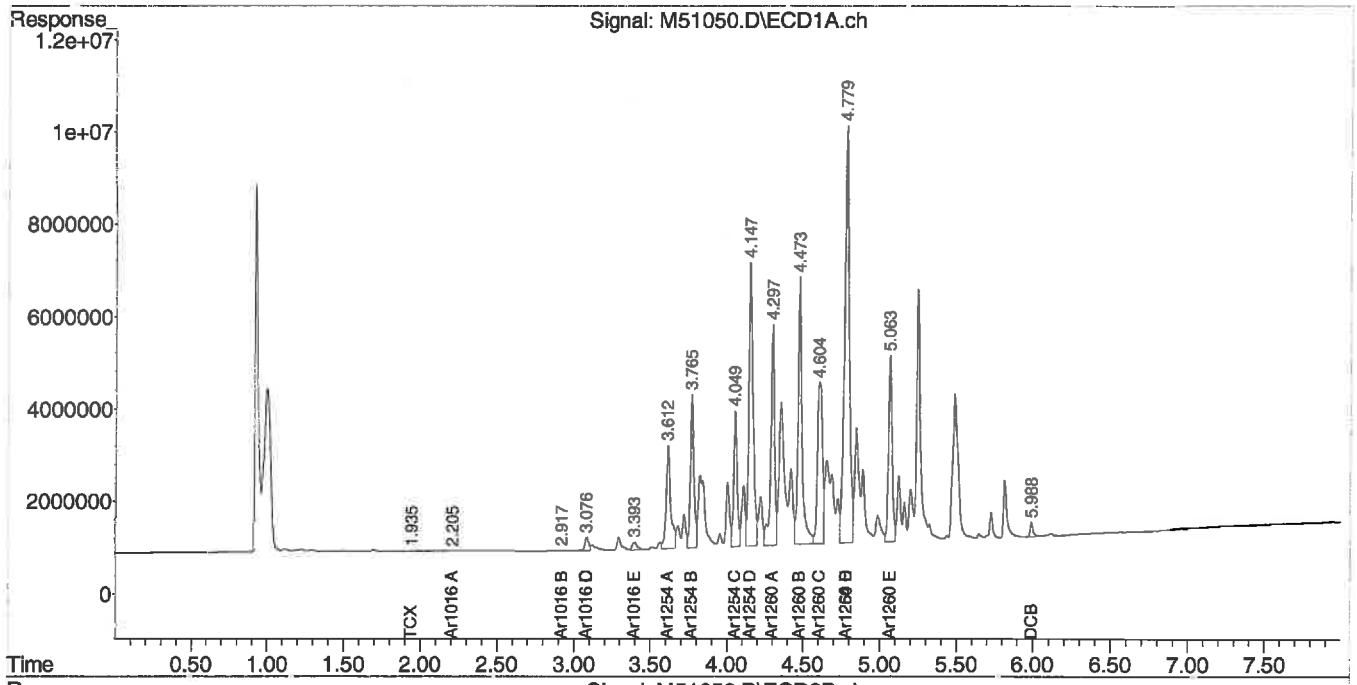
* Values outside QC limits

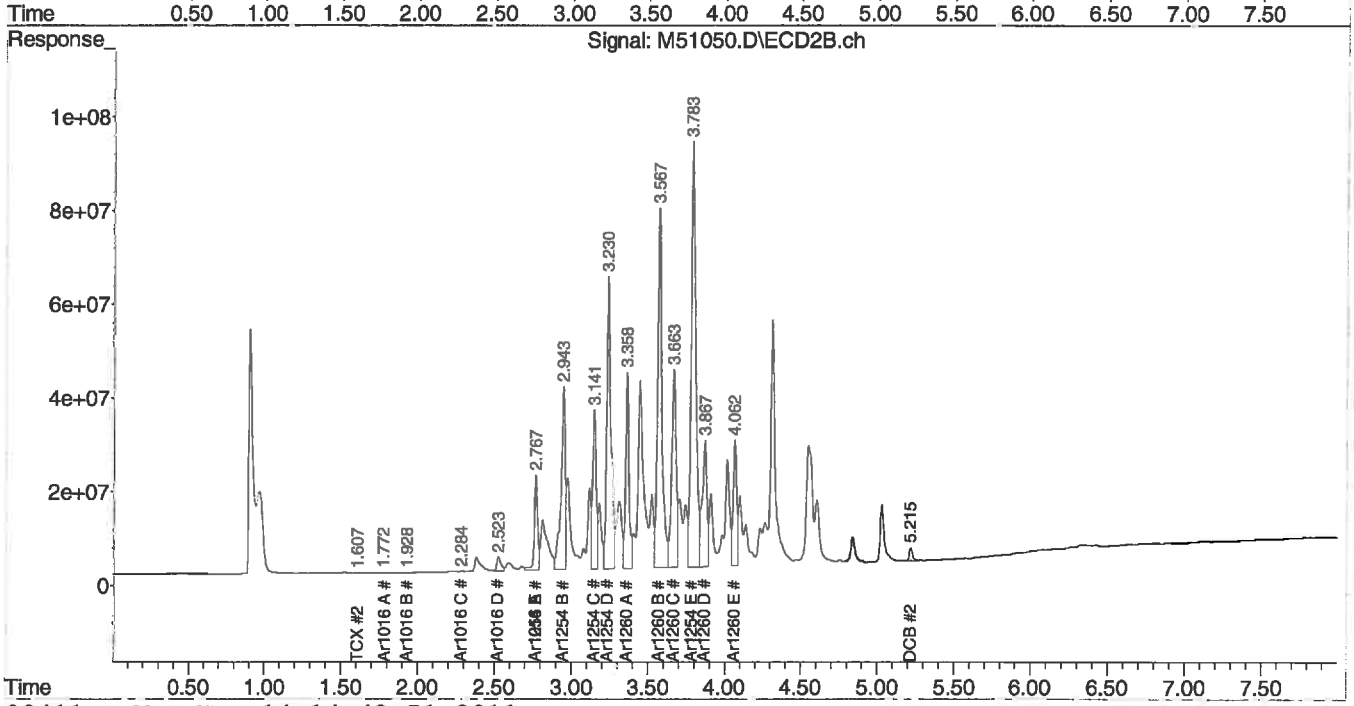
Comments: _____

Data Path : C:\msdchem\1\DATA\111111-M\
Data File : M51050.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 11 Nov 2011 2:43 pm
Operator : JK
Sample : 71462-1,1:50000,,A/C
Misc : SOIL
ALS Vial : 7 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Nov 14 09:36:08 2011
Quant Method : C:\msdchem\1\METHODS\PCB100411.M
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254
QLast Update : Fri Nov 11 14:27:11 2011
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 2 uL
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um





analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Dennis Kingman
Summit Environmental
8 Harlow St. Suite 4A
Bangor ME 04401

November 14, 2011

CLIENT SAMPLE ID

Project Name: Blake Library

Project Number: 11-3265

Field Sample ID: BW-002

SAMPLE DATA

Lab Sample ID: 71462-2
Matrix: Solid
Percent Solid: 98
Dilution Factor: 433000
Collection Date: 11/03/11
Lab Receipt Date: 11/08/11
Extraction Date: 11/09/11
Analysis Date: 11/11/11

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	14289000	U
PCB-1221	14289000	U
PCB-1232	14289000	U
PCB-1242	14289000	U
PCB-1248	14289000	U
PCB-1254	14289000	**89500000**
PCB-1260	14289000	U

Surrogate Standard Recovery

2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.
* The surrogates were diluted out.

PCB Report

Authorized signature

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M
GC Column #1: STX-CLPesticides I
Column ID: 0.25 mm
GC Column #2: STX-CLPesticides II
Column ID: 0.25 mm

SDG:
Sample: 71462-2,1:50000,,A/C
Data File: M51051.D
Dilution Factor: 432552.9

	Column #1	Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	89524996	85351899	4.8	

Column to be used to flag RPD values greater than QC limit of 40%

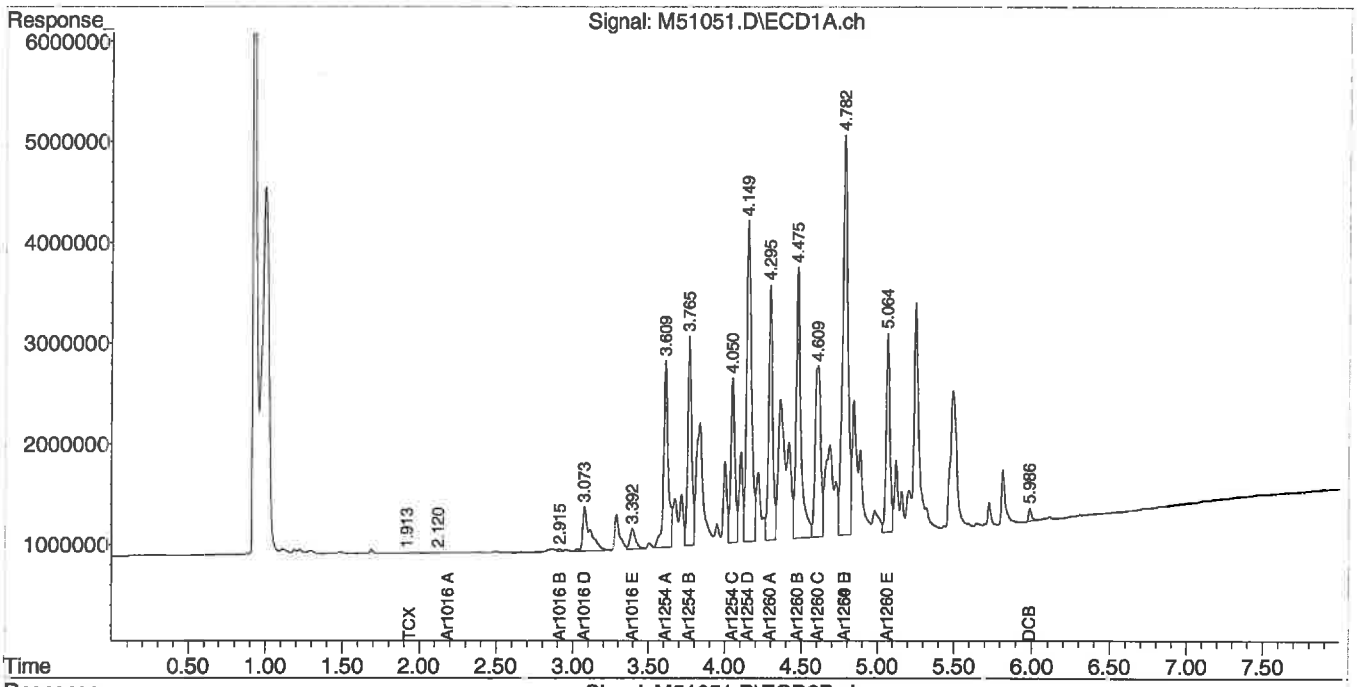
* Values outside QC limits

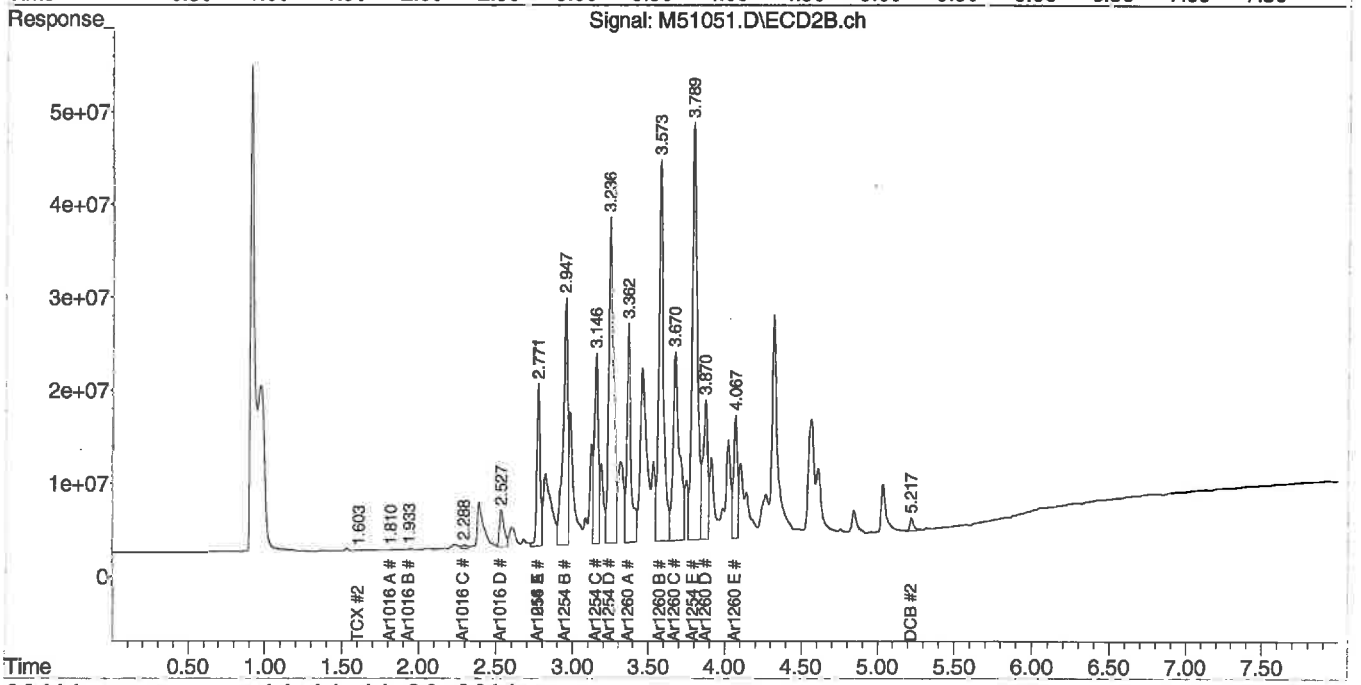
Comments: _____

Data Path : C:\msdchem\1\DATA\111111-M\
Data File : M51051.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 11 Nov 2011 2:53 pm
Operator : JK
Sample : 71462-2,1:50000,,A/C
Misc : SOIL
ALS Vial : 8 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Nov 14 09:36:10 2011
Quant Method : C:\msdchem\1\METHODS\PCB100411.M
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254
QLast Update : Fri Nov 11 14:27:11 2011
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 2 uL
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um





analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Dennis Kingman
Summit Environmental
8 Harlow St. Suite 4A
Bangor ME 04401

November 14, 2011

CLIENT SAMPLE ID

Project Name: Blake Library

Project Number: 11-3265

Field Sample ID: BW-003

SAMPLE DATA

Lab Sample ID: 71462-3
Matrix: Solid
Percent Solid: 96
Dilution Factor: 516000
Collection Date: 11/03/11
Lab Receipt Date: 11/08/11
Extraction Date: 11/09/11
Analysis Date: 11/11/11

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	17028000	U
PCB-1221	17028000	U
PCB-1232	17028000	U
PCB-1242	17028000	U
PCB-1248	17028000	U
PCB-1254	17028000	**125000000**
PCB-1260	17028000	U

Surrogate Standard Recovery

2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.
* The surrogates were diluted out.

PCB Report

Authorized signature

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M
GC Column #1: STX-CLPesticides I
Column ID: 0.25 mm
GC Column #2: STX-CLPesticides II
Column ID: 0.25 mm

SDG:
Sample: 71462-3,1:50000,,A/C
Data File: M51052.D
Dilution Factor: 516322.0

	Column #1	Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	125430922	118776462	5.4	

Column to be used to flag RPD values greater than QC limit of 40%

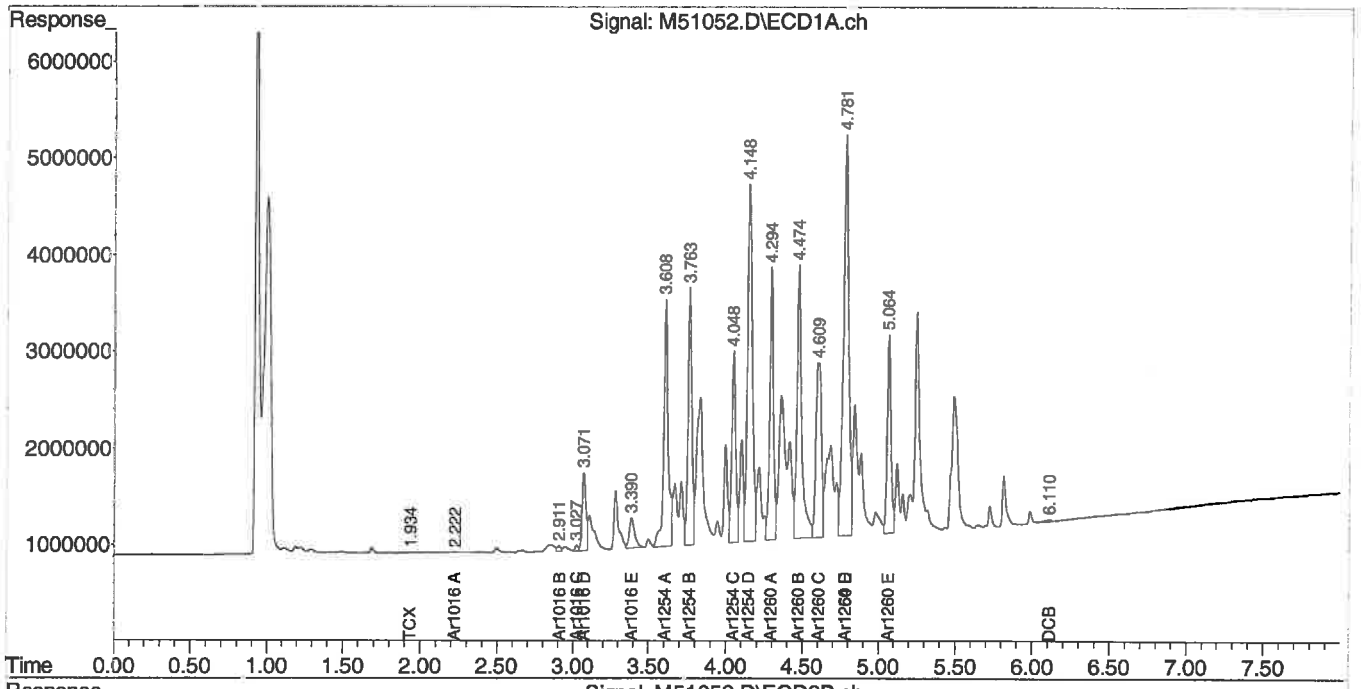
* Values outside QC limits

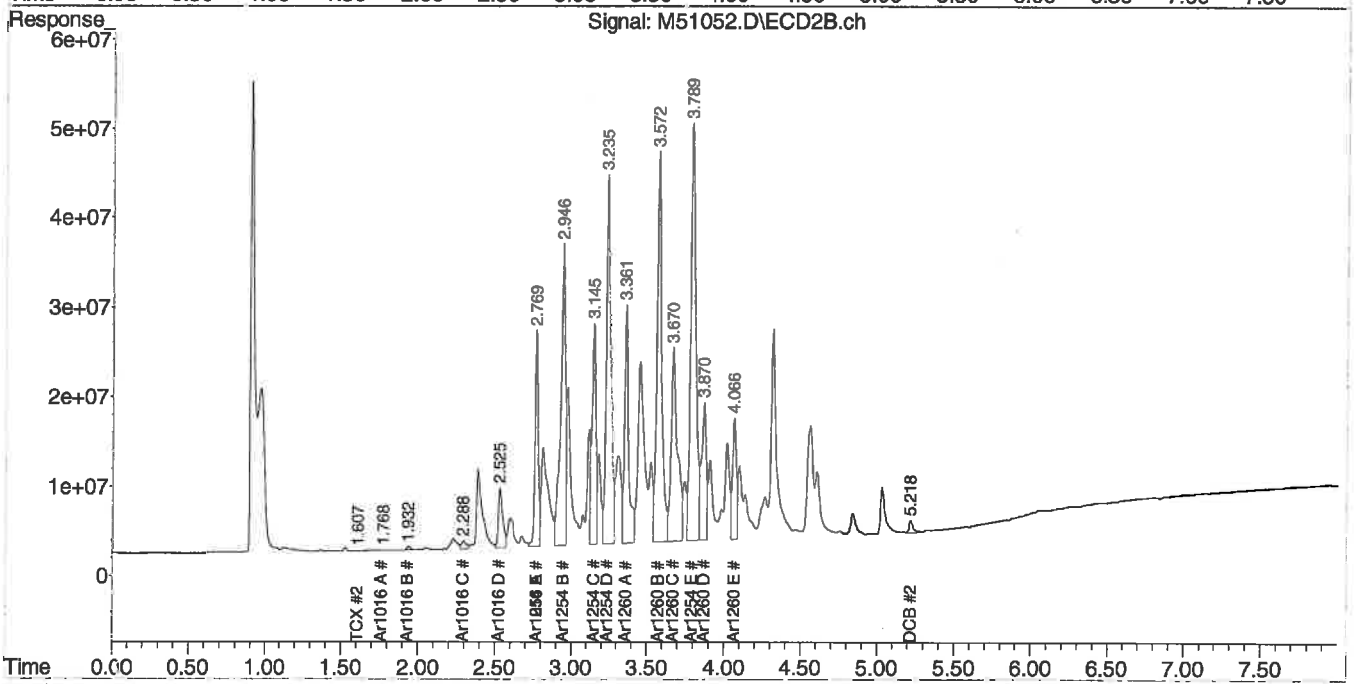
Comments: _____

Data Path : C:\msdchem\1\DATA\111111-M\
Data File : M51052.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 11 Nov 2011 3:03 pm
Operator : JK
Sample : 71462-3,1:50000,,A/C
Misc : SOIL
ALS Vial : 9 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Nov 14 09:36:12 2011
Quant Method : C:\msdchem\1\METHODS\PCB100411.M
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254
QLast Update : Fri Nov 11 14:27:11 2011
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 2 uL
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um





analytics environmental laboratory LLC

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Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Dennis Kingman
Summit Environmental
8 Harlow St. Suite 4A
Bangor ME 04401

November 15, 2011

CLIENT SAMPLE ID

Project Name: Blake Library

Project Number: 11-3265

Field Sample ID: BD-004

SAMPLE DATA

Lab Sample ID: 71462-4
Matrix: Solid
Percent Solid: 98
Dilution Factor: 60400
Collection Date: 11/03/11
Lab Receipt Date: 11/08/11
Extraction Date: 11/09/11
Analysis Date: 11/15/11

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	1993000	U
PCB-1221	1993000	U
PCB-1232	1993000	U
PCB-1242	1993000	U
PCB-1248	1993000	U
PCB-1254	1993000	**28600000**
PCB-1260	1993000	U

Surrogate Standard Recovery

2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.
* The surrogates were diluted out.

PCB Report

Authorized signature

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M
GC Column #1: STX-CLPesticides I
Column ID: 0.25 mm
GC Column #2: STX-CLPesticides II
Column ID: 0.25 mm

SDG: 71462
Sample: 71462-4,1:10000,,A/C
Data File: M51134.D
Dilution Factor: 60379.2

	Column #1	Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	28569490	24848243	13.9	

Column to be used to flag RPD values greater than QC limit of 40%

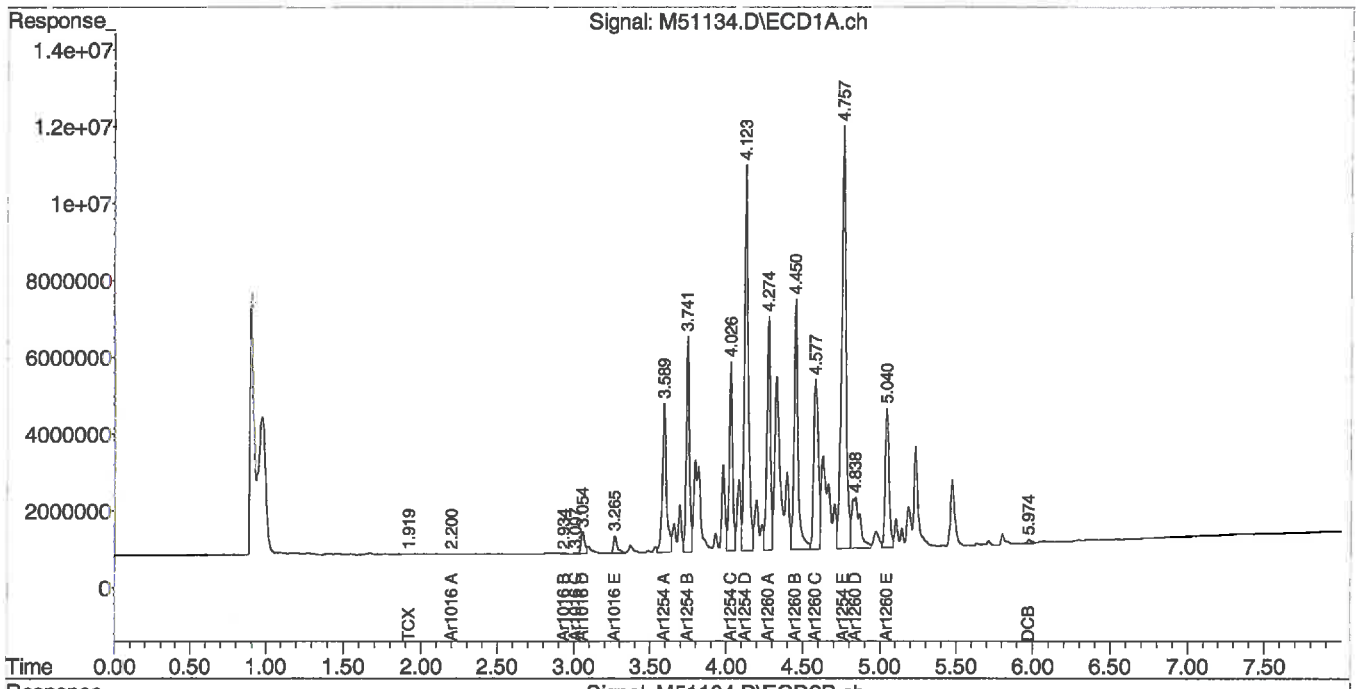
* Values outside QC limits

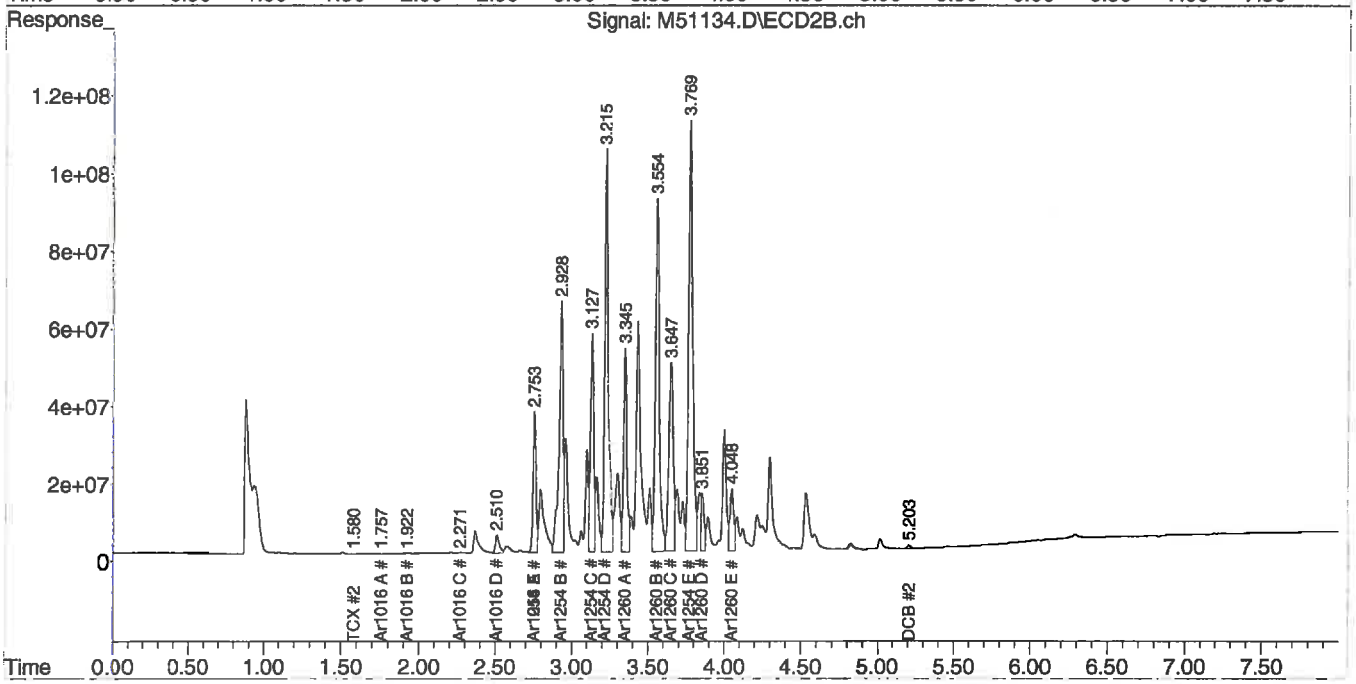
Comments: _____

Data Path : C:\msdchem\1\DATA\111511-M\
Data File : M51134.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 15 Nov 2011 11:53 am
Operator : JK
Sample : 71462-4,1:10000,,A/C
Misc : SOIL
ALS Vial : 7 Sample Multiplier: 1

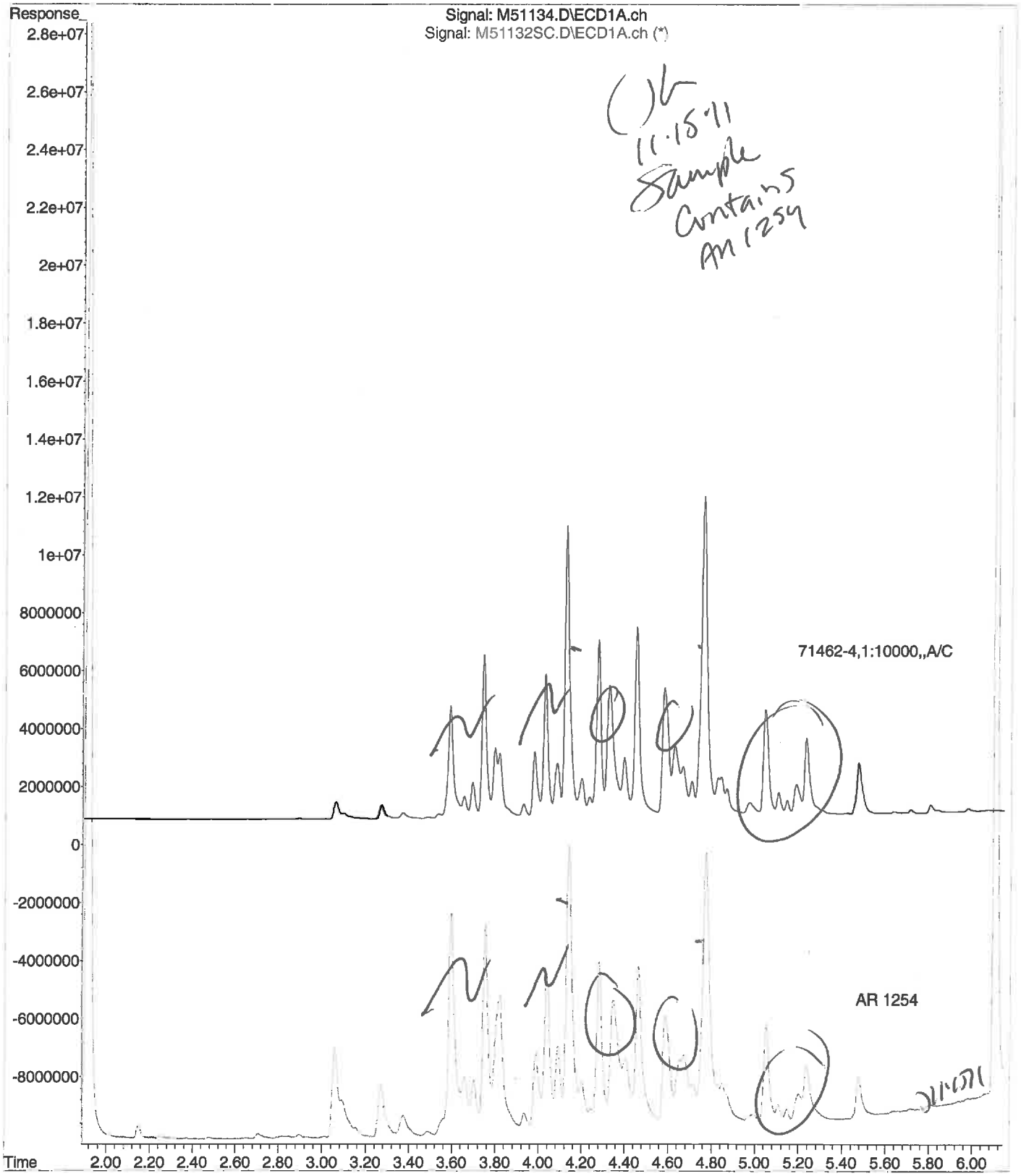
Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Nov 15 12:01:54 2011
Quant Method : C:\msdchem\1\METHODS\PCB100411.M
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254
QLast Update : Tue Nov 15 09:28:10 2011
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 2 uL
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um





File :C:\msdchem\1\DATA\111511-M\M51134.D
Operator : JK
Acquired : 15 Nov 2011 11:53 am using AcqMethod PCB.M
Instrument : Instrument M
Sample Name: 71462-4,1:10000,,A/C
Misc Info : SOIL
Vial Number: 7



analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Dennis Kingman
Summit Environmental
8 Harlow St. Suite 4A
Bangor ME 04401

November 14, 2011

CLIENT SAMPLE ID

Project Name: Blake Library

Project Number: 11-3265

Field Sample ID: BD-005

SAMPLE DATA

Lab Sample ID: 71462-5
Matrix: Solid
Percent Solid: 96
Dilution Factor: 374000
Collection Date: 11/03/11
Lab Receipt Date: 11/08/11
Extraction Date: 11/09/11
Analysis Date: 11/11/11

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	12342000	U
PCB-1221	12342000	U
PCB-1232	12342000	U
PCB-1242	12342000	U
PCB-1248	12342000	U
PCB-1254	12342000	**87300000**
PCB-1260	12342000	U

Surrogate Standard Recovery

2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.
* The surrogates were diluted out.

PCB Report

Authorized signature

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M
GC Column #1: STX-CLPesticides I
Column ID: 0.25 mm
GC Column #2: STX-CLPesticides II
Column ID: 0.25 mm

SDG:
Sample: 71462-5,1:50000,,A/C
Data File: M51054.D
Dilution Factor: 374349.3

	Column #1	Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	87290392	82660178	5.4	

Column to be used to flag RPD values greater than QC limit of 40%

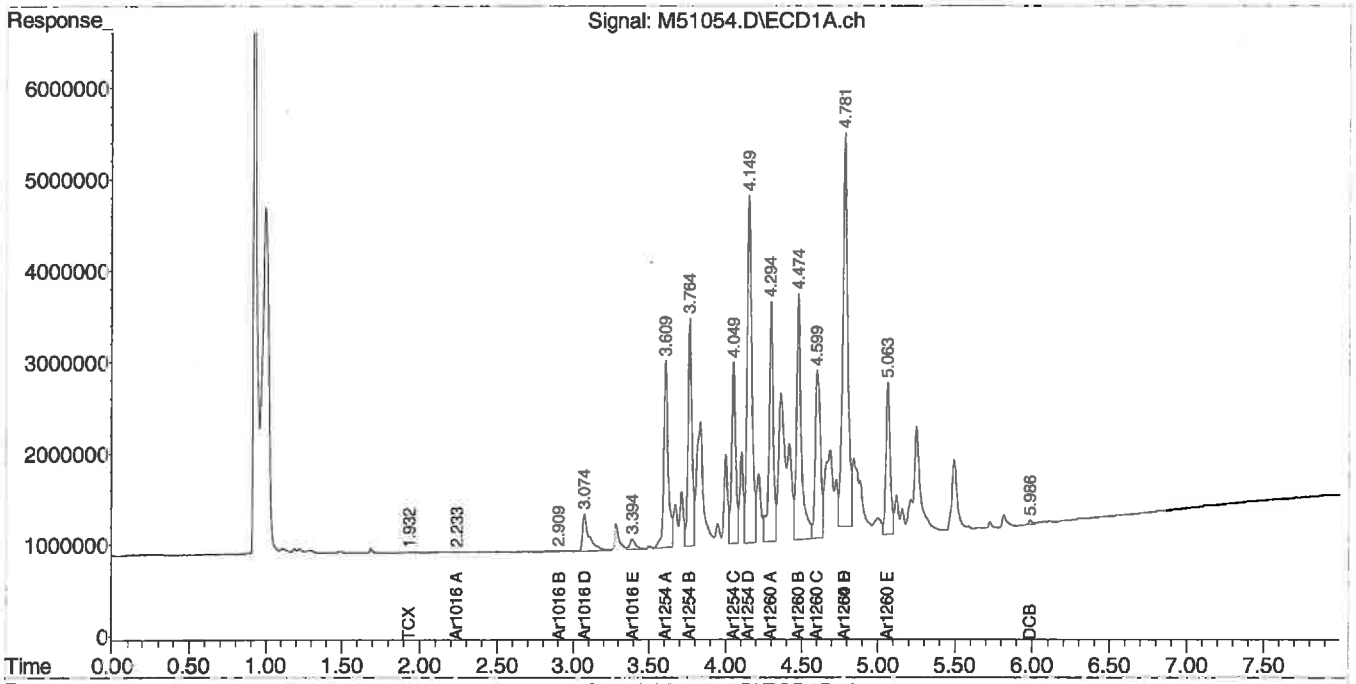
* Values outside QC limits

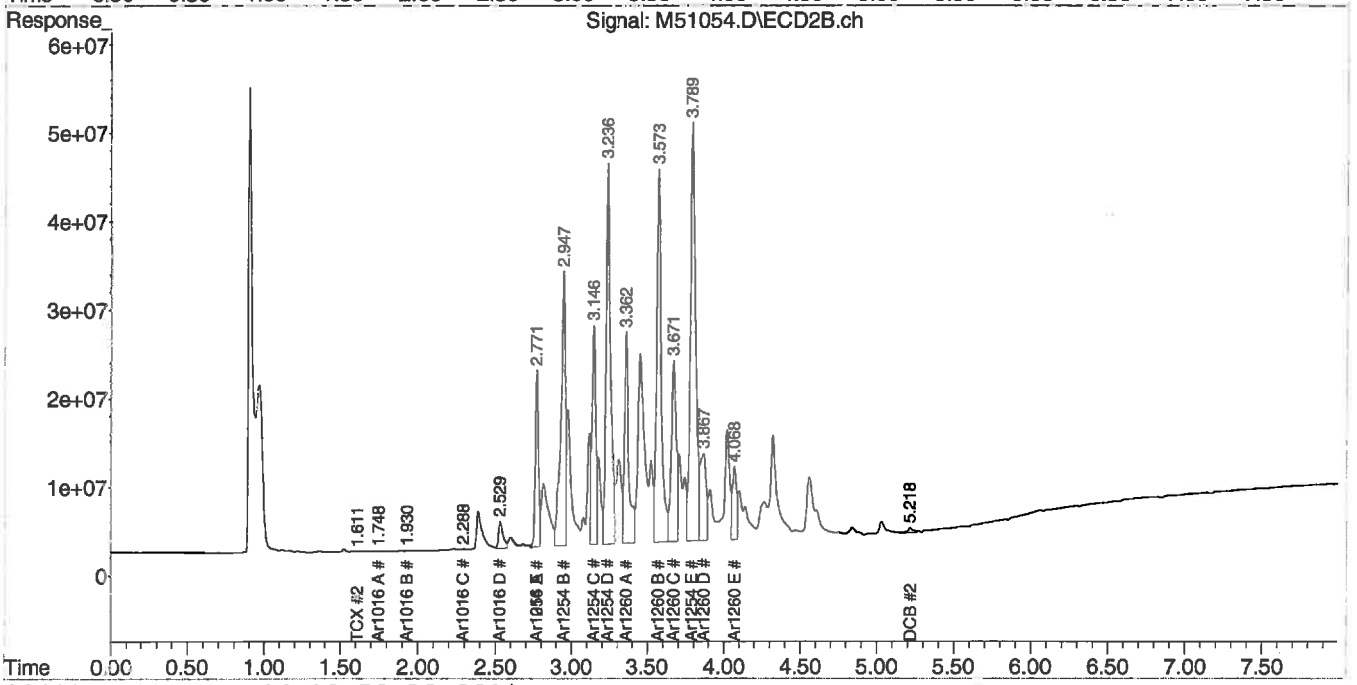
Comments: _____

Data Path : C:\msdchem\1\DATA\111111-M\
Data File : M51054.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 11 Nov 2011 3:23 pm
Operator : JK
Sample : 71462-5,1:50000,,A/C
Misc : SOIL
ALS Vial : 11 Sample Multiplier: 1

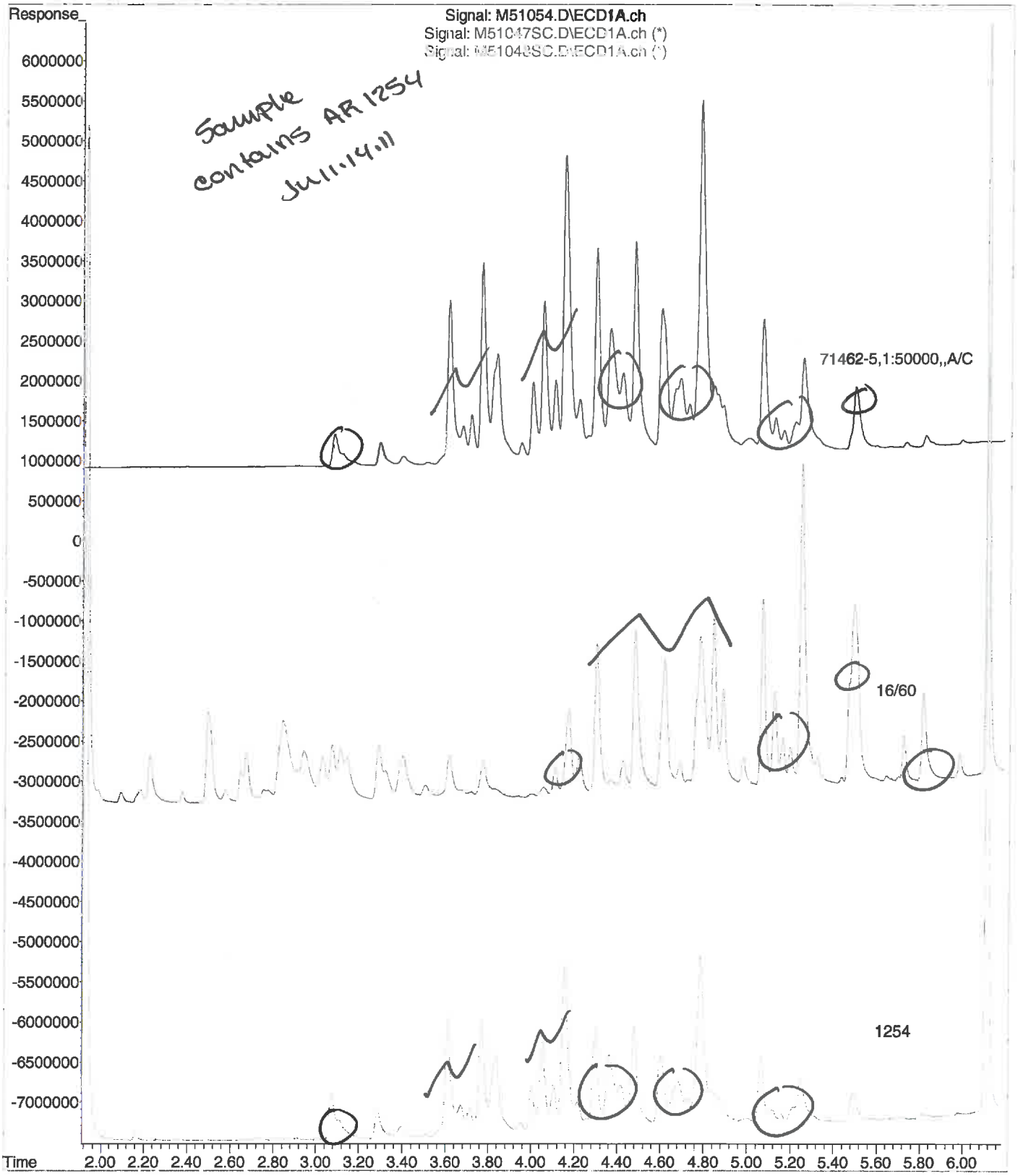
Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Nov 14 10:50:09 2011
Quant Method : C:\msdchem\1\METHODS\PCB100411.M
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254
QLast Update : Fri Nov 11 14:27:11 2011
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 2 uL
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um





File :C:\msdchem\1\DATA\111111-M\M51054.D
Operator : JK
Acquired : 11 Nov 2011 3:23 pm using AcqMethod PCB.M
Instrument : Instrument M
Sample Name: 71462-5,1:50000,,A/C
Misc Info : SOIL
Vial Number: 11



JK 11.15.11

analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Dennis Kingman
Summit Environmental
8 Harlow St. Suite 4A
Bangor ME 04401

November 14, 2011

CLIENT SAMPLE ID

Project Name: Blake Library

Project Number: 11-3265

Field Sample ID: BD-006

SAMPLE DATA

Lab Sample ID: 71462-6
Matrix: Solid
Percent Solid: 96
Dilution Factor: 271000
Collection Date: 11/03/11
Lab Receipt Date: 11/08/11
Extraction Date: 11/09/11
Analysis Date: 11/11/11

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	8943000	U
PCB-1221	8943000	U
PCB-1232	8943000	U
PCB-1242	8943000	U
PCB-1248	8943000	U
PCB-1254	8943000	**128000000**
PCB-1260	8943000	U

Surrogate Standard Recovery

2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.
* The surrogates were diluted out.

PCB Report

Authorized signature

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M
GC Column #1: STX-CLPesticides I
Column ID: 0.25 mm
GC Column #2: STX-CLPesticides II
Column ID: 0.25 mm

SDG:
Sample: 71462-6,1:50000,,A/C
Data File: M51055.D
Dilution Factor: 271041.5

	Column #1	Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	128449111	115724282	10.4	

Column to be used to flag RPD values greater than QC limit of 40%

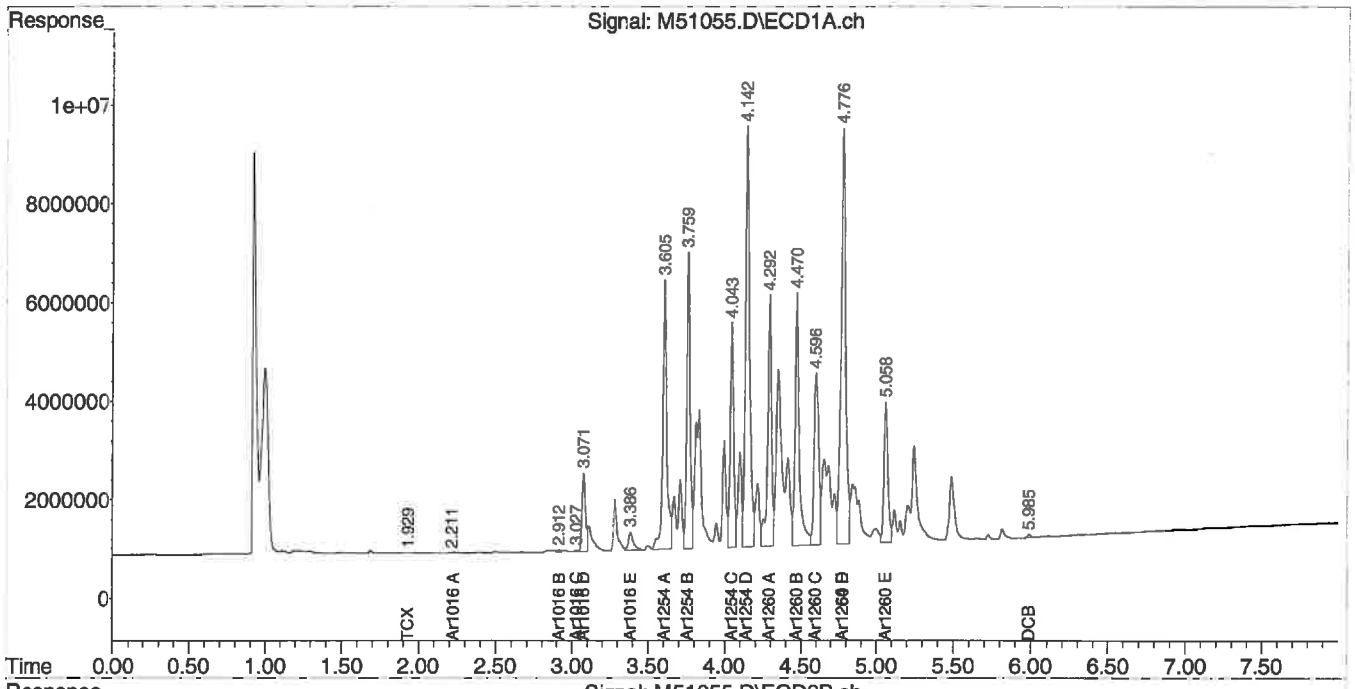
* Values outside QC limits

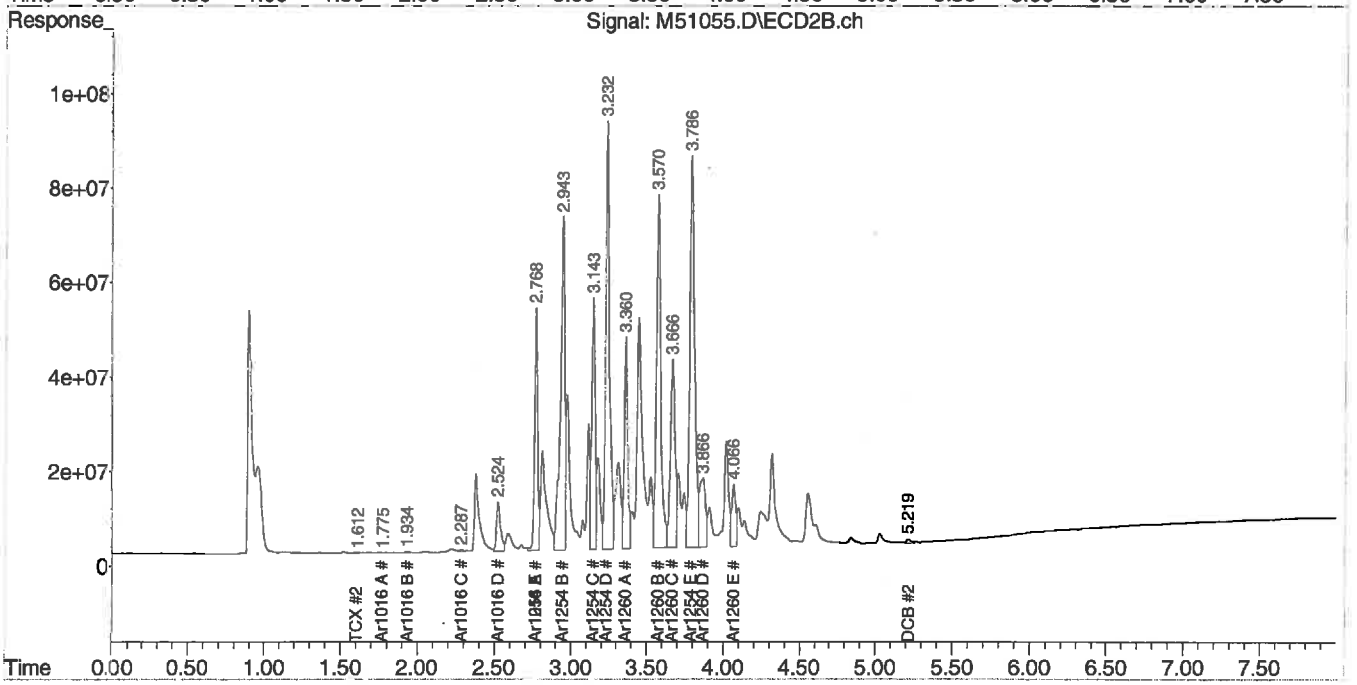
Comments: _____

Data Path : C:\msdchem\1\DATA\111111-M\
Data File : M51055.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 11 Nov 2011 3:33 pm
Operator : JK
Sample : 71462-6,1:50000,,A/C
Misc : SOIL
ALS Vial : 12 Sample Multiplier: 1

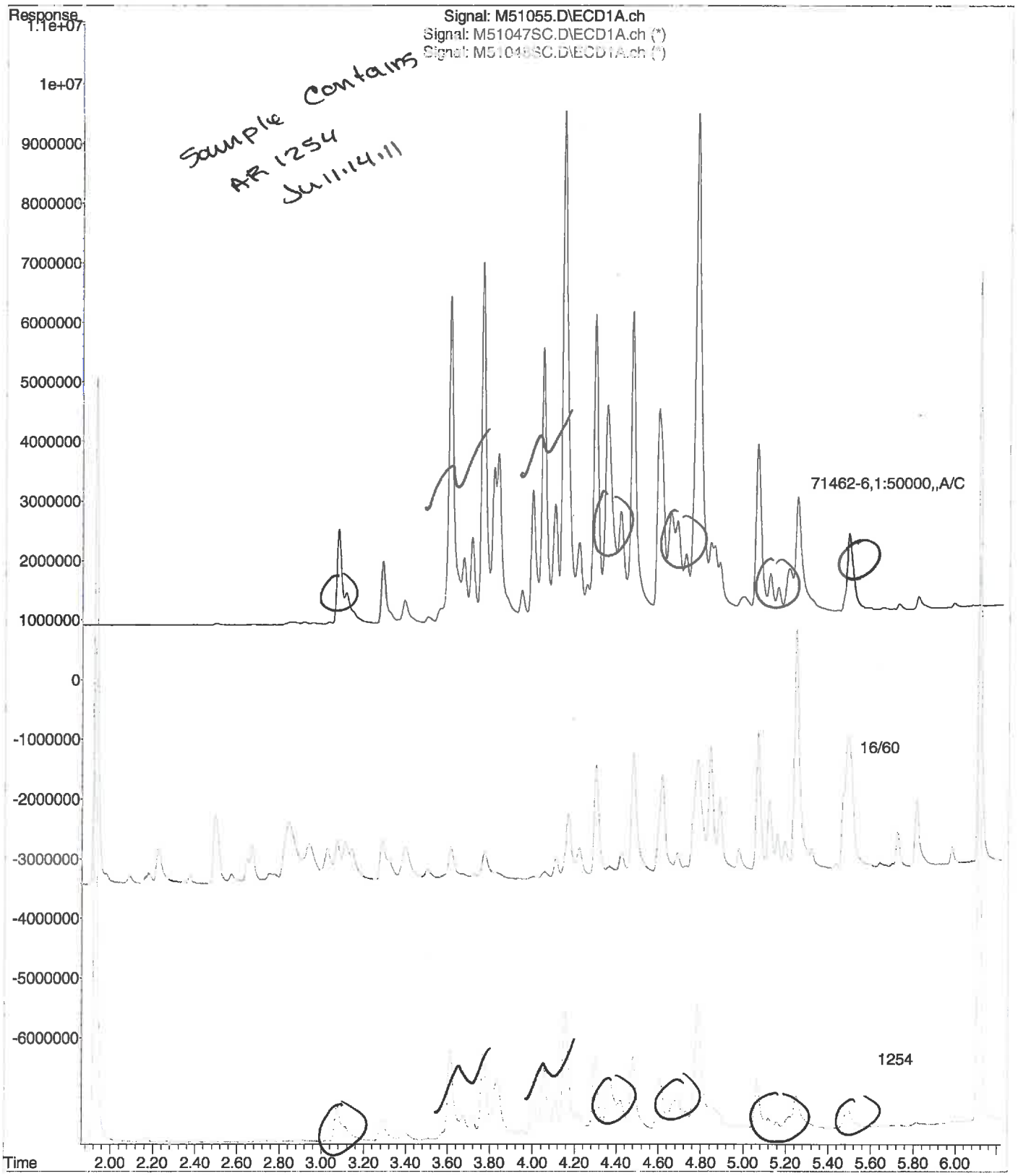
Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Nov 14 09:36:18 2011
Quant Method : C:\msdchem\1\METHODS\PCB100411.M
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254
QLast Update : Fri Nov 11 14:27:11 2011
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 2 uL
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um





File :C:\msdchem\1\DATA\111111-M\M51055.D
Operator : JK
Acquired : 11 Nov 2011 3:33 pm using AcqMethod PCB.M
Instrument : Instrument M
Sample Name: 71462-6,1:50000,,A/C
Misc Info : SOIL
Vial Number: 12



JK 11.15.11

analytics environmental laboratory LLC

PCB
QC FORMS

AnalyticsLLC:AEL Documents LLC:Pkg Dividers:PCBQC.doc

PCB SOIL
SYSTEM MONITORING COMPOUNDS
SUMMARY

Instrument ID: L
GC Column #1: STX-CLPesticides I
Column ID: 0.25 mm
GC Column #2: STX-CLPesticides II
Column ID: 0.25 mm

SDG: 71462

	Column #1				Column #2			
SAMPLE ID	SMC 1 (%)	#	SMC 2 (%)	#	SMC 1 (%)	#	SMC 2 (%)	#
B110911PSOX,,A/C	101		85		84		92	
L110911PSOX,,A/C	98		84		90		89	
LD110911PSOX,,A/C	97		85		85		88	

		Lower Limit	Upper Limit
SMC #1 =	TCX	40	130
SMC #2 =	DCB	40	130

\# Column to be used to flag recovery values outside of QC limits
* Values outside QC limits
D System Monitoring Compound diluted out

PCB SOIL
SYSTEM MONITORING COMPOUNDS
SUMMARY

Instrument ID: M
GC Column #1: STX-CLPesticides I
Column ID: 0.25 mm
GC Column #2: STX-CLPesticides II
Column ID: 0.25 mm

SDG: 71462

	Column #1				Column #2			
SAMPLE ID	SMC 1 (%)	#	SMC 2 (%)	#	SMC 1 (%)	#	SMC 2 (%)	#
B110911PSOX,RR2,,A/C	89		96		72		85	
71462-1,1:50000,,A/C	D		D		D		D	
71462-2,1:50000,,A/C	D		D		D		D	
71462-3,1:50000,,A/C	D		D		D		D	
71462-5,1:50000,,A/C	D		D		D		D	
71462-6,1:50000,,A/C	D		D		D		D	

		Lower Limit	Upper Limit
SMC #1 =	TCX	40	130
SMC #2 =	DCB	40	130

\# Column to be used to flag recovery values outside of QC limits
* Values outside QC limits
D System Monitoring Compound diluted out

PCB SOIL
SYSTEM MONITORING COMPOUNDS
SUMMARY

Instrument ID: M
GC Column #1: STX-CLPesticides I
Column ID: 0.25 mm
GC Column #2: STX-CLPesticides II
Column ID: 0.25 mm

SDG: 71462

	Column #1				Column #2			
SAMPLE ID	SMC 1 (%)	#	SMC 2 (%)	#	SMC 1 (%)	#	SMC 2 (%)	#
B110911PSOX,RR,,A/C	94		101		74		87	
71462-4,1:10000,,A/C	D		D		D		D	

	Lower Limit	Upper Limit
SMC #1 = TCX	40	130
SMC #2 = DCB	40	130

\# Column to be used to flag recovery values outside of QC limits
* Values outside QC limits
D System Monitoring Compound diluted out

PCB SOIL
LABORATORY CONTROL SAMPLE/DUPLICATE
PERCENT RECOVERY

Instrument ID: L

GC Column #1: STX-CLPesticides I

Column ID: 0.25 mm

GC Column #2: STX-CLPesticides II

Column ID: 0.25 mm

SDG:

Non-spiked sample: B110911PSOX,,A/C

Spike: L110911PSOX,,A/C

Spike duplicate: LD110911PSOX,,A/C

COMPOUND	LCS SPIKE ADDED (ug/kg)	LCSD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD	#
PCB 1016	200	200	65	140	30	0	193	96		213	106		9.9	
PCB 1260	200	200	60	130	30	0	191	95		202	101		5.9	
PCB 1016 #2	200	200	65	140	30	0	189	95		241	120		24.0	
PCB 1260 #2	200	200	60	130	30	0	180	90		204	102		12.5	

Column to be used to flag recovery and RPD values outside of QC limits

* Values outside QC limits

LCS/LCSD spike added values have been weight adjusted.

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

_____

analytics environmental laboratory LLC

CHAIN OF CUSTODIES

Chain Of Custody Form

analytics environmental laboratory, llc
195 Commerce Way, Suite E
Portsmouth, NH 03801
(800) 929-9906
(603) 436-5111
(603) 430-2151 Fax

For Analytics Use Only

Samples were:
1) Shipped or hand-delivered
2) Temperature (°C): 4.3 ~
3) Received in good condition: Y or N
4) pH checked by: N/A
5) Labels checked by: OP 11/8/11

Project Name: BLAKE LIBRARY
Project#: 11-3265
Company: SUMMIT ENVIRO CONSULT
Report to: DENNIS KINGMAN
Address: 8 HARLOW ST SUITE 4A
BANGOR, ME 04401
Phone: 207-262-9040
Quote #:
PO# (if required):

Preservation Code:
Preseravtion Key:
A= HCL
B= 4°C
C= Unpres
D = MeOH
E = HNO3
F = H2SO4
G = Hexane
H = Other

Circle and/or Write Required Analysis Followed by Preservation Code
Please Print preservation code here

Matrix Key:
C = Concrete
WP = Wipe
WW = Wastewater
SW = Surface Water
E = Extract
GW = Groundwater
DW = Drinking Water
S = Soil / Sludge
O = Oil
X = Other

Sample Identification	Sample Date	Sample Time	Field Filtered? Y or N	VOC: 8260 524.2 624	SVOC: 8270 625 PAH only SIM	Pesticides: 8081 608	PCB: 8082 608 Soxhlet Y or N	TPH: 8015 (Gas Range) ME4217	TPH: 8015 (Diesel Range) 8100M ME4125	EPH: Full or Ranges only TETPH	VPH: Full or Ranges only	Metals: RCRA8 PP13 TAL23 Other**	Matrix	No. of Containers	pH checked	Analytics Sample #
BW-001	11/03/11	1410	N				Y						X	1		71462-1
BW-002		1415														-2
BW-003		1420														-3
BD-004		1430														-4
BD-005		1430														-5
BD-006		1435														-6

Email Results to: DKINGMAN@SUMMITENV.COM

Turnaround Time (TAT)
☐ 24 Hours* ☐ 48 Hours*
☐ 72 Hours* ☐ 5 Days*
☒ 10 Days
*Fee may apply; lab approval required

Comments, Additional Analyses, or Special Instructions:
** List requested metals here
CAULK SAMPLES for PCB analysis 8082
SOXHLET EXTRACTION

Please note: For volatile analyses, a trip blank has been provided in the cooler. If you want the trip blank run and reported please write the trip blank on the COC. Trip Blank analyses will be charged unless other arrangements have been made.

Project Requirements:
*Fee may apply

Report Type:
☐ MCP* ☒ Level II*
☐ CTRCP* ☐ Level III*
☐ DOD* ☐ Level IV*
☐ Standard

State:
☐ NH ☐ MA ☒ ME ☐ CT ☐ RI
Other:

State Standard: ME
(eg. S-1 or GW-1)
EDD Required: Y* (N)
Type:

Sampler Name (Print): DENNIS KINGMAN

	Date	Time		
Relinquished By Sampler:	11/07/11	1600	Received By:	Fed Ex
Relinquished By:	11/8/11	10:00	Received By:	
Relinquished By:			Received By:	

ANALYTICS SAMPLE RECEIPT CHECKLIST

analytics environmental laboratory LLC

AEL LAB#: 71462
CLIENT: Summit Environmental
PROJECT: Blake Library

COOLER NUMBER: Client Cooler
NUMBER OF COOLERS: 1
DATE RECEIVED: 11/8/11

A: PRELIMINARY EXAMINATION:

DATE COOLER OPENED: 11/8/11
Date Received: 11/8/11

1. Cooler received by(initials): DW
2. Circle one: Hand delivered (If so, skip 3) Shipped
3. Did cooler come with a shipping slip? (Y) N

3a. Enter carrier name and airbill number here: FedEx 7953 8040 0846

4. Were custody seals on the outside of cooler? Y (N)
How many & where: — Seal Date: — Seal Name: —

5. Did the custody seals arrive unbroken and intact upon arrival? Y (N/A)

6. COC: N/A

7. Were Custody papers filled out properly (ink,signed, etc)?	(Y)	N
8. Were custody papers sealed in a plastic bag?	(Y)	N
9. Did you sign the COC in the appropriate place?	(Y)	N
10. Was the project identifiable from the COC papers?	(Y)	N
11. Was enough ice used to chill the cooler? (Y) N	Temp. of cooler:	4.3 c

B. Log-In: Date samples were logged in: 11/8/11 By: DW

12. Type of packing in cooler(bubble wrap, popcorn)	(Y)	N
13. Were all bottles sealed in separate plastic bags?	(Y)	N
14. Did all bottles arrive unbroken and were labels in good condition?	(Y)	N
15. Were all bottle labels complete(ID,Date,time,etc.)	(Y)	N
16. Did all bottle labels agree with custody papers?	(Y)	N
17. Were the correct containers used for the tests indicated:	(Y)	N
18. Were samples received at the correct pH?	Y	(N/A)
19. Was sufficient amount of sample sent for the tests indicated?	(Y)	N
20. Were all samples submitted within holding time?	(Y)	N
21. Were bubbles absent in VOA samples?	Y	(N/A)

If NO, List Sample ID's and Lab #s: _____

22. Laboratory labeling verified by (initials): CP Date: 11/8/11

From: (207) 262-9040 Origin ID: BGRA
Dennis Kingman
SUMMIT ENVIRONMENTAL CONSULT
8 HARLOW STREET
SUITE 4A
BANGOR, ME 04401

J11201103050225

Ship Date: 07NOV11
ActWgt: 15.0 LB
CAD: 1957951/INET3210

Delivery Address Bar Code

SHIP TO: (603) 436-5111 BILL SENDER
Steve Knollmeyer
Analytics Environmental Laboratory
195 COMMERCE WAY UNIT E

PORTSMOUTH, NH 03801

Ref # 11-3265
Invoice #
PO #
Dept #

TUE - 08 NOV A2
STANDARD OVERNIGHT

TRK# 7953 8040 0896
0201

03801
NH-US
MHT

03 IGGA

50FG1/8C50/F5F4

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Appendix B

PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

Client Name:	**Project No.**
University of Maine at Fort Kent	11-3265

Photo No. 1

Date:
November 3, 2011

Site Location:
Blake Library
University of Maine at Fort Kent

Description:
View of the west entrance door unit.

Photo No. 2

Date:
November 3, 2011

Site Location:
Blake Library
University of Maine at Fort Kent

Description:
View of sample locations BD-004

Summit Environmental Consultants, Inc

PHOTOGRAPHIC LOG

Client Name:	**Project No.**
University of Maine at Fort Kent	11-3265

Photo No. 3

Date:
November 3, 2011

Site Location:
Blake Library
University of Maine at Fort Kent

Description:
View of windows sampled on the west elevation

Photo No. 4

Date:
November 3, 2011

Site Location:
Blake Library
University of Maine at Fort Kent

Description:
View of windows sampled on the south elevation.

PHOTOGRAPHIC LOG

Client Name:	Project No.
University of Maine at Fort Kent	11-3265

Photo No. 5

Date:
November 3, 2011

Site Location:
Blake Library
University of Maine at Fort Kent

Description:
View of sample location BW-001

Photo No. 6

Date:
November 3, 2011

Site Location:
Blake Library
University of Maine at Fort Kent

Description:
View of sample location BW-002.

PHOTOGRAPHIC LOG

Client Name:	**Project No.**
University of Maine at Fort Kent	11-3265

Photo No. 7

Date:
November 3, 2011

Site Location:
Blake Library
University of Maine at Fort Kent

Description:
View of sample location BW-003

Appendix C

PRODUCT INFORMATION

ENCAPSULANT

Construction

Sikagard®-550 W Elastic

Crack bridging protective coating for concrete

Product Description

Sikagard®-550 W Elastic is a one part, plasto-elastic coating based on UV-curing acrylic dispersion with excellent crack-bridging properties even at temperatures below 0°C.

Uses

- Protection and enhancement of concrete structures (normal and lightweight concrete), especially exposed concrete surfaces with a risk of cracking
- With concrete repair works as an elastic protective top coating on Sika® mortar thin layer levelling mortar (refer to product data sheet)

Characteristics / Advantages

- Crack-bridging even at low temperatures (-20°C)
- High diffusion resistance against CO_2 reducing the rate of carbonation
- Water vapour permeable
- Very good resistance against weathering and ageing
- Can be diluted with water
- Environmentally friendly (solvent free)
- Reduced tendency to dirt pick up and contamination

Tests

Approval / Standards

Test according to ZTV SIBOS-D II from the Polymer Institute dd 16.10.01 Nr. P2438

Test according to ZTV SIBOS-D II from the Polymer Institute dd 16.10.01 Nr. P2436

The product is included in a compilation of tested products and systems as per OS 5a (OS DII) at the German Institute of Road Systems and is registered in the LCPC (French Laboratoire des Ponts et Chaussées) list of approved paint systems for civil engineering structures.

Product Data

Form

Appearance / Colours

Thixotropic liquid available in almost every colour shade.

Packaging

15 l oval plastic pail

Storage

Storage Conditions / Shelf-Life

12 months from date of production if stored properly in undamaged and unopened original sealed packaging in cool and dry conditions. Protect from direct sunlight and frost.

Technical Data

Chemical Base	Acrylate dispersion
Density	~ 1.39 kg/l (at +20°C)
Solid Volume	~ 53.4%
Solid Content	~ 66.1%
Layer Thickness	d_{minp} (minimum required thickness to achieve the required characteristics - CO_2 equivalent air thickness of 50 m and crack bridging) = 200 microns. D_{maxp} (maximum required thickness not to go beyond the H_2O equivalent air thickness of 4 m) = 1635 microns.

Carbon Dioxyde Diffusion Coefficient (μCO_2)

Dry film thickness	d = 337 µm
Equivalent air layer thickness	$S_{D,}$ CO_2 = 84 m
Diffusion coefficient CO_2	$\mu CO_2 = 2.5 \times 10^5$
Requirements for protection	≥ 50 m

Water Vapour Diffusion Coefficient (μH_2O)

Dry film thickness	d = 319 µm
Equivalent air layer thickness	$S_{D,}$ H_2O = 0.78 m
Diffusion coefficient H_2O	$\mu H_2O = 2.5 \times 10^3$
Requirements for breathability	≤ 4 m

Mechanical / Physical Properties

Elongation at Tear	Elongation at break at room temperature (not exposed to weathering): 63% Elongation at break at -20°C: 32%
Crack-Bridging Capacity	Class I_T according to ZTV SIB 90-TL/TP OS

System Information

System Structure

System	Product [1]	Number of applications
Priming [2]	Sikagard®-552 W Aquaprimer	1
Top coat	Sikagard®-550 W Elastic	2
Priming [2]	Sikagard®-552 W Aquaprimer	1
Intermediate coat [3]	Sikagard®-545 W Elastofill or Sikagard®-526 Porefiller	1 - 2
Top coat[4]	Sikagard®-550 W Elastic	2

Note[1]
Please refer to the respective data sheet for additional information.

Note[2]
For very difficult substrate (very dense or weak with tensile strength < 1 N/mm^2) and at low temperature, use solvent containing primer Sikagard®-551 S Elastic Primer.

Note[3]
The number of layer depends on the pore structure in order to achieve a pore-free surface.

Note[4]
In case of an intensive yellow or red colour shade and/or a dark substrate, more than two coats might be required.

Application Details

Consumption

Product	Per coat
Sikagard®-551 S Elastic Primer	~ 0.10 - 0.15 kg/m^2
Sikagard®-552 W Aquaprimer	~ 0.10 - 0.15 kg/m^2
Sikagard®-545 W Elastofill	~ 0.80 - 1.10 kg/m^2
Sikagard®-556 Porefiller	~ 0.20 - 0.30 kg/m^2
Sikagard®-550 W Elastic	~ 0.25 - 0.35 kg/m^2

Substrate Preparation

Exposed concrete without existing coating:

The surface must be dry, sound and free from loose and friable particles. Suitable preparation methods are steam cleaning, high pressure water jetting or blastcleaning.

New concrete must be at least 28 days old.

If required, a levelling pore sealer (e.g. Sika® MonoTop®-620, Icoment-520, Sikagard®-545 W Elastofill, Sikagard®-526 Porefiller etc.) should be applied. For cement based products, allow a curing time of at least 4 days before coating.

Exposed concrete with existing coating:

Existing coatings must be tested to confirm their adhesion to the substrate - adhesion test average >0,8 N/mm^2 with no single value below 0.5 N/mm^2.

Inadequate adhesion:
Existing coatings must be completely removed by suitable methods and the substrate must be sufficiently sound and suitable to be coated as above.

Adequate adhesion:
Thorough cleaning of all surfaces by steam cleaning or high pressure water jetting
For water based coating, use Sikagard-552 W Aquaprimer as primer.
For solvent based coating, use Sikagard-551 S Elastic Primer as primer.

In case of doubt, carry out adherence testing to determine which primer is most suitable - wait at least 2 weeks prior to conduct the adhesion test - an average value of 0.8 N/mm² is required with no single value below 0.5 N/mm².

Application Conditions / Limitations

Substrate Temperature	+8°C min. / +30°C max.
Ambient Temperature	+8°C min. / +30°C max.
Relative Air Humidity	< 80%
Dew Point	Temperature must be at least 3°C above dew point.

Application Instructions

Mixing

The materials are supplied ready for use. Stir thoroughly prior to application.

Application Method / Tools

Apply Sikagard®-551 S Elastic Primer or Sikagard®-552 W Aquaprimer evenly onto the substrate. For use on very dense substrates up to 10% Sika Thinner C may be added to Sikagard®-551 S Elastic Primer.

Sikagard®-550 W Elastic can be applied by brush, roller or airless spray.

Cleaning of Tools

Clean all tools and application equipment with clean water immediately after use. Hardened / cured material can only be removed mechanically.

For Sikagard®-551 S Elastic Primer use Sika® Thinner C.

Waiting Time / Overcoatability

Waiting time between coats at +20°C substrate temperature:

Previous coating	Waiting time	Next coating
Sikagard®-552 W Aquaprimer	5 hours min.	Sikagard®-550 W Elastic
Sikagard®-551 S Elastic Primer	18 hours min.	Sikagard®-550 W Elastic
Sikagard®-550 W Elastic	8 hours min.	Sikagard®-550 W Elastic

Note: When application is on existing coatings, the waiting time for both primers will increase by 100%.

Refresher coats of Sikagard®-550 W Elastic can be applied without priming if the existing coat has been thoroughly cleaned.

Notes on Application / Limitations

Do not apply when there is:

- Expected rain
- Relative humidity >80%
- Temperature below +8°C and/or below dew point
- Concrete younger than 28 days

The system is resistant to aggressive atmospheric influences.

Curing Details

Curing Treatment

Sikagard®-550 W Elastic does not require any special curing but must be protected from rain for at least 4 hours at +20°C.

Applied Product ready for use

Full cure: ~ 7 days at +20°C

Value Base

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

Local Restrictions

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

Health and Safety Information

For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.

Legal Notes

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

Construction

Sika Ireland Limited
Sika House
Ballymun Ind Est
Ballymun
Dublin 11
Ireland

Phone 01 8620709
Telefax 01 8620707
www.sika.ie

ISO 14001 ISO 9001

Construction

SikaColor®-671 W

Protective and decorative coating for facades with a smooth and coloured finish

Product Description

SikaColor®-671 W is a one part coating based on water dispersed acrylic resin designed for protection, decoration and waterproofing of facades, with a smooth coloured finish.

Uses

- As a protective decorative and waterproofing coating for concrete, mortar, brick and stone facades
- As an interior walls decorative coating in public buildings such as hospitals, schools and museums etc.
- As a base coat for the subsequent application of the textured top coat - SikaColor®-672 W

Characteristics / Advantages

- High diffusion resistance against CO_2, reducing the rate of carbonation
- Water vapour permeable, allowing the substrate to breathe
- Excellent resistance against weathering and ageing
- Waterproof against driven rain
- Environmentally friendly, solvent free product
- Easy application
- High alkali resistance
- Non tacky with reduced tendency to dirt-pick up
- Good opacity and covering ability

Product Data

Form

Appearance / Colours	Cream and selected colours according to the colour chart.
Packaging	25 kg tins

Storage

Storage Conditions / Shelf-Life	12 months from date of production if stored properly in unopened and undamaged original sealed packaging in cool and dry conditions. Protect from direct sunlight and frost.

Technical Data

Chemical Base	Filled acrylate resin dispersion.
Density	~ 1.40 kg/l (at +20°C)
Solid Volume	~ 68% by volume
Solid Content	~ 55% by weight
Layer Thickness	60 microns min. (per layer) / 120 microns max. (per layer)

Carbon Dioxyde Diffusion Coefficient (μCO_2)

Dry film thickness	d = 120 µm
Equivalent air layer thickness	$S_{D,}\ CO_2$ = 384 m
Diffusion coefficient CO_2	$\mu CO_2 = 3.2 \times 10^6$
Protection requirements	≥ 50 m

Water Vapour Diffusion Coefficient (μH_2O)

Dry film thickness	d = 120 µm
Equivalent air layer thickness	$S_{D,}\ H_2O$ = 0.13 m
Diffusion coefficient H_2O	μH_2O = 1119
Breathability requirements	≤ 4 m

System Information

System Structure

Normal conditions:

System	Product	Number of applications
Priming	Not required	
Top coat	SikaColor®-671 W	2

Very absorbent substrates:

Priming	SikaColor®-671 W diluted with 10% water	1
Top coat	SikaColor®-671 W	1 - 2

Very dense substrates:

Priming	Sikagard®-551 S Elastic Primer	1
Top coat	SikaColor®-671 W	2

Marine environment or concrete exposed to de-icing salts:

Priming	Sikagard® hydrophobic impregnation (refer to local Product Data Sheets)	1
Top coat	SikaColor®-671 W	2

Note: A third coat of SikaColor®-671 W may be required with light or bright colour shades in order to achieve good opacity (hiding power).

Application Details

Consumption

~ 200 g/m^2 per coat which is equivalent to a dry film thickness of ~ 60 microns (assuming a loss of 20%).

Substrate Preparation

Exposed concrete without old coatings:
The surface must be clean, sound, dry and free from loose or friable particles. Suitable preparation methods are steam, high pressure water jetting or blastcleaning. Cementitious Sika® thin renderings must be cured at least 5 days before coating.

Exposed concrete with old coating:
Old coatings must be tested for their adequate adhesion to the substrate - adhesion test average > 0.8 N/mm^2 with no single value below 0.5 N/mm^2.

- If there is inadequate adhesion then:
  Old coatings must be completely removed by suitable methods and the substrate must be sufficiently sound and prepared before coating.
- If there is adequate adhesion then:
  Thorough cleaning of all surfaces is required, by steam cleaning or high pressure water jetting.

Application Conditions / Limitations

Substrate Temperature

+8°C min. / +35°C max.

Ambient Temperature

+8°C min. / +35°C max.

Relative Air Humidity

< 80%

Dew Point

Application temperature must be at least 3°C above dew point.

Application Instructions

Mixing

For normal usage, SikaColor®-671 W is supplied ready for use.
Stir thoroughly prior to application.

For use on very absorbent substrates, add up to a maximum of 10% water - stir well prior to use.

Application Method / Tools

SikaColor®-671 W can be applied by brush, short pile roller or airless spray.

The second coat should be applied in a cross wise direction to achieve optimum opacity.

Cleaning of Tools

Clean all tools and application equipment with water immediately after use.
Hardened / cured material can only be removed mechanically.

Waiting Time / Overcoatability

Waiting time between coats:

Previous coating	Waiting time			Next coating
	8 - 10°C	15 - 23°C	30 - 35°C	
Sikagard®-551 S Elastic Primer	24 hours	12 hours	6 hours	SikaColor® -671 W
Sikagard® hydrophobic impregnation	Refer to local Product Data Sheet			Sikagard® -671 W ElastoColor
SikaColor® -671 W	24 hours	6 hours	6 hours	SikaColor® -671 W

Note: A refresher coat of SikaColor® 671 W can be applied without priming if the existing coating has been thoroughly cleaned.

Construction

Notes on Application / Limitations	Do not apply when: - Rain or frost is expected. - Relative humidity is above 80%. - The temperature is below +8°C and/or below dew point conditions. - On wet surfaces. At temperatures below +8°C on very absorbent substrates with strong winds, there is a risk of drying cracks and reduced adhesion so these conditions should be avoided. SikaColor®-671 W is resistant to common atmospheric pollutants and highly resistant to alkalinity from cement based substrate.

Curing Details

Curing Treatment	SikaColor® -671 W does not require any special curing but must be protected from rain for at least 1 hour at +23°C.
Applied Product ready for use	Final drying: ~ 4 hours at +23°C.
Value Base	All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.
Local Restrictions	Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.
Health and Safety Information	For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.
Legal Notes	The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

Sika Ireland Limited
Ballymun House
Ballymun Ind Estate
Ballymun
Dublin 11
Ireland

Phone +01 8620709
Telefax +01 8620707
www.sika.ie

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